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TREATMENT OF NEPHROTIC EDEMA

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AND
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When the progress of medical therapy during the past twenty-five years is discussed, usually reference is made first to diabetes, second to pernicious anemia and third to various states of deficiency. Sometimes advances made in the chemotherapy and immunotherapy of infectious diseases are considered, but rarely is mention made of the great progress achieved in the treatment of patients who have nephrotic edema of moderate or extreme degree. Not long ago it was necessary for such patients to be hospitalized for many months before elimination of excessive fluids was accomplished, if it was accomplished at all. Thanks to the observations of clinicians all over the world and to better understanding of basic physiologic principles, such protracted invalidism is of comparatively rare occurrence at the present time.

In 1925, at the Mayo Clinic, dietary measures were supplemented by the administration of ammonium chloride and merbaphen (novasurol[1]). Later, ammonium nitrate in combination with mersalyl (salyrgan) was the treatment of choice.[2] Since 1933, potassium nitrate has been preferred as the diuretic salt and, as is well known, it can be combined advantageously with mercurial diuretics.[3] Experience with a case of nephrotic edema in which the disease was particularly refractory to treatment, in 1937, revealed to us the definite advantage of combining injections of solutions of acacia with the aforementioned treatment.[4] Further experience with acacia has made it clear that many additional diuretic measures, such as the use of organic mercurial compounds, may well be dispensed with in the majority of instances.

A review[5] of the adult patients who had nephrotic edema and who received treatment in the hospital in the last two years reveals that in fourteen instances acacia was not used. Such cases generally were of a mild character. Some patients ultimately became free from edema with nothing more than the use of a low salt diet. In all of the more extensive and resistant cases of nephrotic edema, acacia was used in treatment. Thirty-six (90 per cent) of forty patients, on their first admission to the hospital, after treatment which included injections of solutions of acacia, were relieved of edema. Of the sixty-four patients admitted to the hospital because of nephrotic edema, fifty-five were readily relieved by treatment with or without acacia. In nine cases, measures to relieve edema were not successful before the dismissal from the hospital.

It has been noted that, in all cases in which the treatment which is to be described in this paper was not successful in mobilizing the edema, such severe anorexia and vomiting were present that neither food nor diuretic salts could be taken in adequate amounts. Except when these serious complications occurred, we have obtained satisfactory diuresis in all of the sixty-four consecutive cases. We feel confident that, with very few exceptions, the regimen which is to be outlined will prove satisfactory for adult patients who have nephrotic edema.

In order that the treatment may lead to the best possible results, it appears essential that it should be carried out in the hospital because close supervision is necessary and because it is fundamental that the amount of salt contained in the diet should be as small as possible. Also, possible complications can be handled more satisfactorily in the hospital than in the home. The patient should remain in bed until recovery is well under way. He should be weighed, preferably every morning before breakfast, and all urine should be saved and measured every twenty-four hours, in order to follow closely the effect of the therapy.

The so-called salt free diet should be prescribed. This requires (1) the use of bread and butter processed without the addition of salt, (2) the selection of foodstuffs that contain minimal amounts of sodium chloride (limitation of the amount of milk given is very important) and (3) omission of salt for flavoring purposes in cooking. In order to avoid serving too tasteless a diet, the use of moderate amounts of condiment is desirable. If patients experience difficulty in ingesting such a diet, we allow them to use a shaker filled with potassium chloride. In addition to being salt free, the diet should contain more protein than has been customarily prescribed in the average case of chronic nephritis without edema. Usually from 70 to 100 Gm. of protein each day is given. The caloric intake should be adequate to maintain the weight of the patient, and, since a considerable number of these patients are fundamentally in a condition of malnutrition, some extra calories may be allowed during the stay in the hospital. Lately we have provided extra vitamins for those patients who have been ill for a long time before hospitalization. The intake of fluid by mouth, including the volume of tea, coffee and soup, should be limited to approximately 800 cc. in twenty-four hours.

Diuretic salts are usually prescribed in the form of potassium nitrate. Most patients receive 9 Gm. daily, divided into three doses. The pills of potassium nitrate

From the Division of Medicine, the Mayo Clinic.

1. Keith, N. M.; Barrier, C. W., and Whelan, Mary: The Diuretic Action of Ammonium Chloride and Novasurol in Cases of Nephritis with Edema, J. A. M. A. **85**: 799-806 (Sept. 12) 1925.
2. Keith, N. M.; Whelan, Mary, and Bannick, E. G.: The Action and Excretion of Nitrates, Arch. Int. Med. **46**: 797-832 (Nov.) 1930.
3. Keith, N. M., and Binger, M. W.: Diuretic Action of Potassium Salts, J. A. M. A. **105**: 1584-1591 (Nov. 16) 1935.
4. Goudsmit, Arnoldus, Jr.: Nephrotic Type of Edema Unusually Resistant to Treatment: Report of Case, Proc. Staff Meet., Mayo Clin. **12**: 401-405 (June 30) 1937.
5. Goudsmit, Arnoldus, Jr., and Binger, M. W.: Unpublished data.

are better tolerated if taken with or immediately after meals. "Enseals" enteric coated pills of 0.5 Gm. each are used.

The intravenous injection of solutions of acacia is now a part of the routine treatment in severe cases. A 6 per cent solution of acacia in 0.06 per cent sodium chloride is used with advantage. The solution, after preparation, is autoclaved repeatedly before merchandising and its formula is based on that used in the clinic for many years without serious untoward effects. It is best to begin the use of acacia two to three days after commencing administration of potassium nitrate. The intravenous injection of a solution of acacia should take approximately one hour. It is advisable not to give more than 500 cc. in one day and to repeat its administration on successive or alternate days until 90 or 120 Gm. (representing three or four injections, respectively) have been given.

In our experience, most patients tolerate the injection without any untoward effects. However, in approximately 10 per cent of cases an urticarial reaction may intervene, for which 8 minims (0.5 cc.) of epinephrine 1 : 1,000 is usually efficient therapy. The occurrence of such a reaction or of any other untoward effect is not a contraindication to repetition of the injection after one or two days. Occasionally, during or shortly after the injection, a patient may complain of dyspnea or pain in the left side of the thorax. We have considered this an indication to stop the injection and to administer from one half to 1 grain (0.032 to 0.065 Gm.) of codeine. The reason for this type of reaction is not clear, since the pulse rate, rate of respiration and blood pressure are usually unchanged. Another form of untoward reaction is that of fever and may consist of an elevation of temperature for three to four hours similar to that associated so much more frequently with blood transfusion. We do not believe that, once its use is indicated, there exists any valid contraindication to the administration of acacia except in the very rare case in which a severe allergic reaction to it has occurred. We have never seen evidence of renal damage attributable to the use of acacia nor have we observed instances in which the blood pressure has remained at a higher level than that which existed previous to the injection. We have, however, definitely observed improvement of renal function and cases in which an elevated blood pressure was lowered subsequent to the administration of acacia. It has been stated in the literature that the liver may be damaged by injections of solutions of acacia. In the dosage employed and with the preparation used we have never had occasion to observe signs or symptoms which could be attributed to damage of the liver. As a matter of fact, we know that a solution of acacia can be given to patients who have severe hepatic cirrhosis without inducing further damage.

When a patient is thus treated with rest in bed, proper diet, potassium nitrate and injections of solutions of acacia, the edema will soon start to disappear. Rarely are additional diuretic measures necessary. If satisfactory diuresis does not ensue, it may be well to determine the concentration of chlorides in the plasma as well as the alkali reserve and adjust any major chemical abnormalities of the blood that exist. In an occasional case in which a moderate amount of anemia is present, blood transfusion at this state sometimes is helpful. If diuresis has not ensued after one week of treatment, the use of some organic mercurial compound may have a beneficial effect. In our experience, thyroid has little to offer as an adjunct to this regimen. Massive accumulation of fluid within the cavities of the body is usually better removed by mechanical means than by nonoperative treatment. Small accumulations of fluid usually are reabsorbed as the remainder of edema disappears. In a case of average severity, diuresis usually will begin by the fourth to the sixth day.

As heretofore stated, of forty consecutive patients treated with acacia, 90 per cent could be dismissed from the hospital completely or almost entirely free from edema. Once diuresis starts, it usually proceeds at a fairly rapid rate. As an average, from 1 to 2 pounds is lost daily, although the rate of loss may be as much as 3 pounds a day. Only rarely is less than 1 pound lost a day. When patients without edema are subjected to a similar regimen, loss of weight is not noticed.

Two physiologic abnormalities may contribute to the appearance of edema in the nephrotic syndrome: (1) The greatly decreased concentration of proteins of the serum and decreased colloid osmotic pressure, usually considered responsible for the deranged equilibrium between the fluid of the blood and that of the tissues, and (2) the greatly decreased ability of the kidney to excrete sodium chloride and water. Whether or not this deficiency in renal function is conditioned in some way by the decreased colloid osmotic pressure of the serum is not known at the present time but, in the absence of another explanation, the assumption seems plausible.

The scheme of treatment proposed appears sound from the point of view of the physiologic disturbance involved. The intake of water and sodium chloride is limited, thus avoiding additional embarrassment to a kidney which has difficulty in excreting these substances. The incorporation of a rather considerable amount of protein in the diet is made with the hope of furnishing material to increase the depleted stores of the serum proteins. Potassium salts, as well as the nitrate ion, are known to cause increased excretion of chloride, and their combination in the form of potassium nitrate makes it the most potent diuretic salt available.

Acacia, which is a colloidal material, in 6 per cent solution possesses almost the same colloid osmotic pressure as normal serum. Thus its administration was recommended in the hope of correcting the greatly diminished colloid osmotic pressure of the serum of patients who have nephrosis. Determination of the colloid osmotic pressure before and after injection of acacia in this type of case, however, has failed to reveal consistent differences which might be correlated with the clinical success of the treatment.[6] The major reason for failure of the colloid osmotic pressure to be increased after the injection of a solution of acacia is that the volume of circulating blood increases and concomitantly the constituents of the serum are diluted. There is no adequate experimental evidence that increase in the volume of circulating blood of itself provokes diuresis. On the other hand, experiments performed on healthy dogs indicate that after injection of a solution of acacia the excretion of chloride is increased.[7] Similarly, among

6. Wies, C. H., quoted by Peters, J. P.: Body Water: The Exchange of Fluids in Man, Baltimore, C. C. Thomas, 1935, pp. 183, 190, 287. Butt, H. R.; Power, M. H., and Keys, Ancel: The Concentration of Acacia in the Serum, Its Rate of Excretion and Its Effect on the Colloid Osmotic Pressure Following Intravenous Injection in Cases of Cirrhosis of the Liver, J. Lab. & Clin. Med. **24**: 690-695 (April) 1939. Goudsmit, Arnoldus, Jr.: Mechanism of the Diuresis Produced by Acacia, Am. J. M. Sc. **199**: 302-303 (Feb.) 1940. Goudsmit, Arnoldus, Jr., and Binger, M. W.: The Mechanism of the Diuresis Produced by Acacia in Man, Am. J. Physiol. **129**: 365 (May) 1940.

7. Goudsmit, Arnoldus, Jr.; Power, M. H., and Bollman, J. L.: The Influence of Gum Acacia in Renal Function, Am. J. Physiol. **126**: 505 (July) 1939.

patients who have a nephrotic type of edema, significant increases in the rate of excretion of chloride and water after the injection of a solution of acacia have been found.[8] Thus, curiously enough, the administration of a substance originally recommended on the assumption that it might increase colloid osmotic pressure appears to be therapeutically active because it facilitates the excretion of chloride and water by the kidney.

SUMMARY

The regimen of treatment herein presented for patients who have the nephrotic type of edema appears to be successful in 90 per cent of the severe types of cases. It consists of rest in bed, a salt-free, high protein diet, restriction of fluids, the oral administration of potassium nitrate and the intravenous injection of solutions of acacia. The latter can be given with comparative safety, provided preparation of the solution conforms with certain principles and provided the total dosage does not exceed the one recommended. Additional diuretic measures are seldom called for.

The favorable effect of administration of potassium nitrate is related definitely to its ability to increase the excretion of sodium chloride. Injections of solutions of acacia appear to augment the rate of excretion of sodium chloride and water as well and do not change significantly the colloid osmotic pressure of the serum.

DESOXYCORTICOSTERONE ACETATE THERAPY IN ADDISON'S DISEASE

CLINICAL CONSIDERATIONS

GEORGE W. THORN, M.D.
AND
WARFIELD M. FIROR, M.D.
BALTIMORE

The synthesis of desoxycorticosterone [1] provided for the first time a practical method for preparing a supply of the crystalline form of the adrenal cortical factor adequate for clinical trial. The effectiveness of this compound in maintaining bilaterally adrenalectomized dogs in good condition despite a diet low in sodium chloride content has been reported.[2] The striking and beneficial effect of the synthetic type of the adrenal cortical principle in the treatment of patients with Addison's disease has also been described.[3] It appears likely that desoxycorticosterone acetate will be given extensive clinical trial as the use of this synthetic preparation greatly reduces the cost of treatment (table 1) and the relative stability and uniform potency of the compound permit more exact regulation of dosage than is possible with aqueous extracts of adrenal cortex. The marked potency of the crystalline substance, however, and the profound effects which attend its administration indicate the need for great care in its use. It is also apparent that the quantity of supplementary sodium chloride must be regulated carefully during treatment with desoxycorticosterone acetate. In contrast to treatment with aqueous extracts of adrenal cortex, which rarely produces overdosage phenomena when given in the quantity which most patients can afford, the continued administration of desoxycorticosterone acetate and added sodium chloride may result in the appearance of edema, hypertension and, in some instances, signs of congestive heart failure.[4]

During the past eighteen months thirty patients with classic signs and symptoms of Addison's disease have been treated with desoxycorticosterone acetate. Through the cooperation of physicians in other clinics throughout the country it has been possible to follow closely the results of treatment with the synthetic substance in thirty-five additional patients. Our purpose in the present communication is to discuss some of the more important clinical considerations which have arisen during the treatment of this group of sixty-five patients with Addison's disease.

GENERAL CONSIDERATIONS

To date treatment with the synthetic compound has been limited to patients with classic signs and symptoms of Addison's disease, i. e. an increase in pigmentation, hypotension, asthenia, loss of weight and gastrointestinal symptoms. In many of these cases critical episodes of acute adrenal insufficiency have occurred, thus substantiating the diagnosis. The sodium chloride deprivation test described by Cutler, Power and Wilder [5] has been employed as an additional aid in diagnosis. However, as these authors indicate, the test should be carried out with extreme caution. This note of warning was amply confirmed, as an adrenal crisis was precipitated in case 19 on the third morning of the test.

It is possible for some patients with Addison's disease to be maintained in fair health by means of sodium chloride therapy alone. However, a return to normal activity on this regimen alone appears to be the exception rather than the rule. It would seem to be both desirable and advisable to provide desoxycorticosterone therapy for all patients with Addison's disease who cannot be restored to normal activity by means of added sodium chloride therapy and a diet of low potassium content.

Although experimental evidence [6] indicates that atrophy of the normal adrenal cortex may follow excessive desoxycorticosterone therapy in normal animals, it is not likely that this fact is of clinical significance since well marked signs and symptoms of Addison's disease rarely are observed until extensive destruction of adrenal cortical tissue has occurred. At present it

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8. Goudsmit, Arnoldus, Jr.; Binger, M. W., and Keith, N. M.: Unpublished data.

This study was aided by a grant from the Committee on Research in Endocrinology, National Research Council.

From the Chemical Division, Medical Clinic, and the Department of Surgery, the Johns Hopkins University and Hospital.

Protocols of patients 1, 2, 4, 5, 6, 7, 8, 9, 10, E. W. and J. P. have been published (Thorn, Howard, Emerson and Firor.[3] Thorn, Howard and Emerson [10]).

Drs. Kendall Emerson Jr., R. Palmer Howard and George Koepf, Miss Mildred Caldwell, supervisor of the metabolism ward, Miss Elizabeth Olsen, dietitian in charge of the metabolism ward, and Mrs. Florence White, of the Biochemical Laboratory of the John Hopkins Hospital, gave assistance and continued cooperation.

1. Steiger, M., and Reichstein, T.: Desoxycorticosterone (21-oxy-progesteron) aus 3-oxy-ätio-cholen-saure), Helvet. chim. acta **20:** 1164, 1937.

2. Thorn, G. W.; Engel, L. L., and Eisenberg, Harry: The Effect of Corticosterone and Related Compounds on the Renal Excretion of Electrolytes, J. Exper. Med. **68:** 161 (Aug.) 1938; Treatment of Adrenal Insufficiency by Means of Subcutaneous Implants of Pellets of Desoxycorticosterone Acetate (a Synthetic Adrenal Cortical Hormone), Bull. Johns Hopkins Hosp. **64:** 155 (March) 1939. Thorn and Eisenberg.[8]

3. Thorn, G. W.; Howard, R. P.; Emerson, Kendall, Jr., and Firor. W. M.: Treatment of Addison's Disease with Pellets of Crystalline Adrenal Cortical Hormone (Synthetic Desoxycorticosterone Acetate) Implanted Subcutaneously, Bull. Johns Hopkins Hosp. **64:** 339 (May) 1939. Cleghorn, R. A.; Fowler, J. L. A., and Wenzel, J. S.: The Treatment of Addison's Disease by Synthetic Adrenal Cortical Hormone (Desoxycorticosterone Acetate), Canad. M. A. J. **41:** 226 (Sept.) 1939. Ferrebee, Ragan, Atchley and Loeb.[4] Thorn, Howard and Emerson.[10]

4. Ferrebee, J. W.; Ragan, Charles; Atchley, D. W., and Loeb, R. F.: Desoxycorticosterone Esters: Certain Effects in the Treatment of Addison's Disease, J. A. M. A. **113:** 1725 (Nov. 4) 1939.

5. Cutler, H. H.; Power, M. H., and Wilder, R. M.: Concentrations of Chloride, Sodium and Potassium in Urine and Blood, J. A. M. A. **111:** 117 (July 9) 1938.

6. Ingle, D. J.: The Effect of Administering Large Amounts of Cortin on the Adrenal Cortices of Normal and Hypophysectomized Rats, Am. J. Physiol. **124:** 369 (Nov.) 1938.

would seem to be unjustifiable to withhold substitution therapy from a patient with Addison's disease if sodium chloride therapy alone was ineffective in completely restoring him to normal activity.

DOSAGE AND MODE OF ADMINISTRATION

A solution of desoxycorticosterone acetate in oil [7] in which 5 mg. of crystalline substance was contained in 1 cc. of sesame oil was used in these studies. Experimental studies [8] indicated that a prolonged effect (twenty-four hours) followed a single intramuscular injection of the compound in oil. The desoxycorticosterone acetate requirement for the majority of patients with Addison's disease appeared to be less than 6 mg. daily. During a crisis or during a period of increased stress from 10 to 25 mg. daily was required.

Patients with Addison's disease can be treated successfully either with desoxycorticosterone acetate alone or with this factor supplemented by sodium chloride therapy. It is possible that desoxycorticosterone treatment alone would result in a lower incidence of undesirable complications, i. e. edema, hypertension and possibly myocardial insufficiency. However, added sodium chloride therapy greatly reduces the desoxycorticosterone requirement and hence the cost of treatment. If care is used in regulating the quantity of added sodium chloride, overdosage phenomena rarely occur.

TABLE 1.—*Approximate Cost of Equivalent Quantities of Adrenal Cortical Principle*

Preparation	Daily Requirement	Approximate Cost per Year *
Aqueous adrenal cortex extract....	8.0 cc.	$900
Synthetic compound in oil.....	2.6 mg.	140
Pellets of synthetic compound....	1.8 mg.	98 †

* Prices quoted to patients by the pharmacy of the Johns Hopkins Hospital, Dec. 15, 1939.

† Since pellets of the synthetic compound are not yet available commercially, the cost of these tablets has been estimated from the price of crystalline desoxycorticosterone acetate in oil.

A simple plan for instituting treatment consists in giving from 6 to 8 Gm. of added sodium chloride by mouth and from 2 to 5 mg. of desoxycorticosterone acetate in oil by injection intramuscularly once daily. The most striking immediate effects of treatment with the synthetic factor are rapid gain in weight associated with retention of sodium, chloride and water, marked increase in plasma volume (hemodilution) and striking improvement in the clinical condition of the patient. Failure to gain weight within forty-eight to seventy-two hours after desoxycorticosterone acetate therapy is instituted is the first indication of insufficient dosage. Too rapid gain in weight (more than 0.5 Kg. daily during the first week of treatment and more than 0.3 Kg. daily subsequently), if continued, indicates overdosage. This will result in the appearance of edema if the dose of desoxycorticosterone or sodium chloride is not reduced. The maximum rise in blood pressure may not occur until treatment has been continued for from four to sixteen weeks.

In some cases treatment with small quantities of the synthetic compound (1 or 2 mg. daily) in addition to from 6 to 8 Gm. daily of added sodium chloride may result in the appearance of edema. Under these circumstances the sodium chloride therapy should be reduced gradually and if necessary entirely discontinued. The optimum daily maintenance dose of desoxycorticosterone acetate appears to be that which will maintain body weight without resulting in excessive weight gain, appearance of edema or too great elevation in blood pressure. It is obvious that overwork, excessive fatigue, exposure to heat or cold or the presence of infection may greatly increase the requirement temporarily.

In some cases complications which exist at the onset of treatment favor the accumulation of excessive quantities of sodium, chloride and water before the optimum therapeutic dose of desoxycorticosterone acetate is attained, i. e. case 4, hypoproteinemia, case 19, phlebitis of the left leg, case 15, myocardial damage. Under these conditions it is advisable to restrict the intake of sodium chloride and to increase slowly the dose of the synthetic compound.

In general, smaller quantities of desoxycorticosterone acetate are indicated in the treatment of patients past middle life since the great increase in blood volume, the rise in blood pressure and the increased physical activity which follow the institution of therapy place a considerable additional load on the cardiovascular system rather suddenly. It is suggested that the activity of patients in the advanced age group, or patients with complicating cardiovascular disease, should be restricted during the first few weeks of treatment.

TREATMENT OF ADRENAL CRISIS

Since the maximum effect from a single intramuscular injection of desoxycorticosterone acetate in oil does not occur until from six to twelve hours after injection, it is desirable in the treatment of adrenal crisis to supplement intramuscular injections of the synthetic compound with intravenously and subcutaneously administered aqueous extract. The following technic has been used successfully:

First Day.—A. Immediately on admission to the hospital the patient is placed in a warm bed and given 0.5 cc. of a solution of epinephrine hydrochloride subcutaneously if the systolic blood pressure is less than 70 mm. of mercury. At the same time (*a*) from 25 to 35 mg. of desoxycorticosterone acetate in oil is injected intramuscularly, the total quantity being divided and injected in three or four different sites; (*b*) 25 cc. of aqueous extract is injected subcutaneously in divided doses, and (*c*) 25 cc. of aqueous extract is added to a venoclysis of 1,000 cc. of 1.5 per cent sodium chloride solution and 1,000 cc. of 5 to 10 per cent dextrose solution, which is administered slowly. Since hypoglycemia frequently complicates a crisis, great care is taken to maintain a normal blood sugar level.[9]

B. During the second twelve hour period from 500 to 1,000 cc. of physiologic solution of sodium chloride

7. The desoxycorticosterone acetate in sesame oil (percorten) used in this study was supplied by Ciba Pharmaceutical Products, Inc., through Dr. E. Oppenheimer. It has not yet been considered by the Council on Pharmacy and Chemistry of the American Medical Association.

8. Thorn, G. W., and Einsenberg, Harry: Studies on Desoxycorticosterone: A Synthetic Adrenal Cortical Hormone, Endocrinology **25**: 39 (July) 1939.

9. Dextrose tolerance curves show (Thorn, Koepf, Kuhlmann and Olsen [16]) that from three to six hours after the administration of dextrose patients with Addison's disease may have rather marked hypoglycemic reactions, if additional carbohydrate is not provided. Reactions are particularly likely to occur after parenteral administration of dextrose. Thus a complicated situation arises in which dextrose solutions given to correct the hypoglycemic state may in turn precipitate a hypoglycemic reaction unless appropriate preventive measures are taken. It is possible that some of the sudden deaths reported in the literature which occurred after an initial satisfactory response may be accounted for by this mechanism. It seems highly important to supply an adequate and continuous source of carbohydrate for all patients during the first forty-eight hours of crisis.

and from 500 to 1,000 cc. of 5 to 10 per cent dextrose solution are slowly given intravenously. If they are tolerated, the patient is encouraged to drink ginger ale and fruit juice. It is not necessary to give additional desoxycorticosterone acetate at this time.

Second Day.—From 10 to 20 mg. of desoxycorticosterone acetate in oil is given intramuscularly and 1,000 cc. of physiologic solution of sodium chloride and 1,000 cc. of 5 to 10 per cent dextrose solution are given intravenously. Frequent small feedings of readily available carbohydrate are given and the patient is encouraged to drink ginger ale and fruit juice. In the event that food and liquids are not tolerated by mouth, great care is taken to provide for an adequate carbohydrate intake by continued parenteral administration of dextrose solution.

Third Day.—From 5 to 15 mg. of desoxycorticosterone acetate in oil is given intramuscularly and, if possible, from 3 to 6 Gm. of sodium chloride (1 Gm. enteric coated tablets) is given by mouth. If sodium chloride is not tolerated by mouth an equivalent quantity of sodium chloride is given parenterally. The appearance of edema indicates excessive sodium chloride and desoxycorticosterone therapy, and the dosage of one or both of these medications is then reduced promptly.

REPORT OF CASE

CASE 18.—*History.*—R. M., a married housewife, aged 34, was admitted to the Johns Hopkins Hospital Aug. 14, 1939, with a diagnosis of Addison's disease. Her present illness began in the summer of 1937, at which time she noted loss of strength and attacks of weakness associated with nausea and vomiting. During the summer of 1938 brownish pigmentation of the skin developed over the hands and neck. Since the onset of illness she had lost 9.1 Kg. of weight. Because of frequent attacks of sore throat, a tonsillectomy was performed on June 19, 1939. After the tonsillectomy the patient did very poorly; nausea and vomiting occurred and were followed by extreme prostration. At this time a diagnosis of Addison's disease was made and the administration of added sodium chloride and daily injections of desoxycorticosterone acetate was followed by rapid improvement. She was transferred to the Johns Hopkins Hospital August 14, for implantation of pellets of desoxycorticosterone acetate after two months' treatment with daily injections of desoxycorticosterone acetate in oil and sodium chloride therapy.

Physical Examination.—The patient was rather thin but not acutely ill. Her temperature was 99.8 F., pulse rate 96 and respiratory rate 20 per minute. At this time the blood pressure was 98 mm. of mercury systolic, 60 mm. diastolic. The skin showed areas of brownish pigmentation over the hands, arms, neck, thorax, dorsum of the feet and to a lesser extent on the face. Some pigmentation was present about the margin of the lower lip. Examination of the lungs, heart and abdomen revealed no abnormality.

Laboratory Data.—The red blood cell count was 4,220,000, hemoglobin content 90 per cent (13.8 Gm.) and white blood cell count 7,720 with 49 per cent polymorphonuclears, 42 per cent lymphocytes and 9 per cent monocytes. The volume of packed red cells was 35 per cent. The blood Wassermann reaction was negative. The sedimentation rate was 20 mm. in one hour, corrected. The blood nonprotein nitrogen level was 23 mg., blood sugar 79 mg., the plasma carbon dioxide-combining power 54.1 volumes per cent and the total serum protein 6.8 Gm. per hundred cubic centimeters. The serum chloride value was 108.4 milliequivalents, serum sodium 141.3 milliequivalents and serum potassium 3.6 milliequivalents per liter. The x-ray appearance of the heart, lungs and abdomen was normal. The electrocardiogram showed an inverted T wave in the chest lead.

After the oral administration of 1.75 Gm. of dextrose per kilogram of body weight the following blood sugar values were noted: fasting 80 mg., one-half hour after dextrose 125 mg., one hour 100 mg., two hours 90 mg., three hours 75 mg. and four hours 75 mg. per hundred cubic centimeters.

Desoxycorticosterone Acetate Treatment.—Treatment with the synthetic product was instituted at a time when the patient was very weak, nauseated and vomiting. The blood pressure was 60 systolic, 40 diastolic, and the heart rate was rapid, the heart sounds being distant. Repeated infusions of 5 per cent dextrose and 1.5 per cent sodium chloride were given, supplemented by fruit juice and ginger ale given orally in small quantities. Ten mg. of desoxycorticosterone acetate was injected intramuscularly once daily. As soon as possible the parenterally administered sodium chloride was replaced by tablets of sodium chloride (1 Gm. enteric coated) given by mouth. One tablet was given three times daily and later two tablets three times daily, i. e. a total of 6 Gm. daily. On this regimen the patient gained weight rapidly, her strength improved and her blood pressure was increased to 94 systolic, 60 diastolic. Ten days after treatment was instituted, however, edema of the extremities and some puffiness of the face were noted, accompanied by a rather severe headache. It was evident that excessive sodium chloride and water retention had occurred. For this reason the daily dose of desoxycorticosterone acetate in oil was reduced to 5 mg. daily, the dose of added sodium chloride being maintained at 6 Gm. daily. Later the sodium chloride was reduced to 3 Gm. daily and the desoxycorticosterone acetate to 4 mg. daily. It was observed that the patient could be maintained in very good condition on this regimen.

Approximately two months after treatment with daily injections of the synthetic compound in oil had been instituted, the patient was admitted to the Johns Hopkins Hospital for implantation of pellets of crystalline desoxycorticosterone acetate. At this time her blood pressure was 98 systolic, 60 diastolic, and her weight 52.5 Kg. and she was greatly improved clinically. Treatment at this time consisted of a single daily injection of 4 mg. of desoxycorticosterone acetate in oil and 3 Gm. of added sodium chloride in addition to a diet of high sodium chloride content. At this time eight pellets of crystalline desoxycorticosterone acetate (approximately 125 mg. each) were implanted in the subcutaneous tissues beneath the right scapula. The daily injections of the substance were discontinued but the sodium chloride therapy was continued.

TABLE 2.—*Blood Sugar Values Following the Oral Administration of Dextrose* *

Time	Before Treatment	Desoxycorticosterone Acetate Treatment (6 Months)
Fasting	80	84
½ hour	125	100
1 hour	100	141
2 hours	90	118
3 hours	75	79

* The dose was 1.75 Gm. of dextrose per kilogram of body weight. Values indicate milligrams per hundred cubic centimeters.

After the implantation of the pellets the patient continued to do well. At the time of discharge, August 25, the blood pressure was 100 systolic, 68 diastolic, and she had gained 2.5 Kg. of weight since admission. Laboratory data at the time of discharge were as follows: The red blood cell count was 3,980,000, hemoglobin level 82 per cent (12 Gm.), white blood cell count 7,480 and the volume of packed red blood cells 35 per cent. The blood nonprotein nitrogen level was 24 mg., the blood sugar 80 mg., the plasma carbon dioxide-combining power 52.2 volumes per cent and the total serum protein 6.2 Gm. per hundred cubic centimeters. The serum concentration of chlorides was 105.6 milliequivalents, of sodium 140 milliequivalents and of potassium 4. milliequivalents per liter. The electrocardiogram showed less inversion of the T wave in the chest lead than on admission.

At present, six months after treatment with the synthetic compound was instituted, the patient is in very good condition and is able to carry on all her usual household duties. She had gained a total of 7 Kg. in weight and the blood pressure had increased from 98 systolic, 60 diastolic, to 130 systolic, 90

diastolic. One month after the pellets were implanted, the 3 Gm. of added sodium chloride was discontinued. Present therapy consists solely of the pellets of desoxycorticosterone acetate which were implanted in August 1939.

COMPLICATIONS

1. In two cases (1 and 6) intramuscular injections of desoxycorticosterone acetate in sesame oil were associated with constitutional symptoms (fever and malaise) and localized redness, pain and tenderness at the site of the injections. It was shown that these reactions were due to the injection of oil of sesame and not to the desoxycorticosterone acetate.[10] In these cases the necessity for daily injections of the compound in oil was obviated by subcutaneously implanting pellets of the crystalline form of the material.

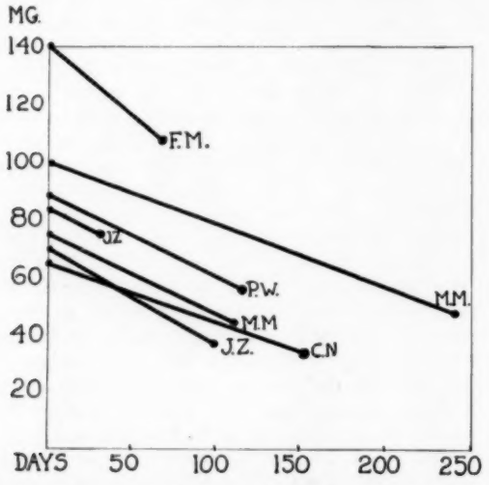

Fig. 1.—Decrease in the weight of pellets in patients. The quantity of desoxycorticosterone acetate observed daily from a pellet weighing approximately 100 mg. was found to be 0.29 mg. (mean).

2. Edema associated with headache may result from an overdose of desoxycorticosterone acetate but more frequently results from combined treatment with this substance and sodium chloride. This complication is most likely to occur during the first two or three weeks of treatment when the optimum daily maintenance dose is being ascertained. The edema disappears rapidly after the reduction of the dose of sodium chloride or the synthetic compound or after the addition of potassium salts to the diet, i. e. a 10 per cent solution of potassium citrate from 10 to 20 cc. added to fruit juice and given two or three times daily.

3. Occasionally after a continued period of desoxycorticosterone acetate therapy during which the patient's plasma volume, weight, blood pressure and activity have been greatly increased, dyspnea associated with signs of pulmonary edema may be noted. This complication is most likely to occur in cases in which there is some evidence of preexisting myocardial damage or vascular disease and may be avoided if great care is exercised in the regulation of treatment and if activity is restricted during the early period of rehabilitation. Treatment consists in absolute bed rest, digitalization, immediate withdrawal of sodium chloride therapy and, if necessary, a reduction in the dose of desoxycorticosterone acetate.

4. Hypertension may be noted following continued treatment with sodium chloride and the adrenal principle. In cases of Addison's disease in which hypertension antedated the onset of symptoms of Addison's disease, the blood pressure is particularly likely to return to a high level after adequate therapy. The elevated blood pressure responds readily to withdrawal of added sodium chloride, to reduction in the dose of the adrenal factor or to the additional potassium medication.

5. Hypoglycemia may be observed following a prolonged fast in patients treated with desoxycorticosterone acetate. The presence of complicating infection greatly increases the likelihood of hypoglycemic reactions. Until more is known about the nature of the disturbance in carbohydrate metabolism, it is desirable to provide a diet high in readily available carbohydrate for all patients with Addison's disease.

6. The continued administration of excessive quantities of desoxycorticosterone acetate and added sodium chloride may result in an abnormal lowering of the serum concentration of potassium. This is particularly likely to occur if large quantities of dextrose solution are given simultaneously. In case 6 on two occasions an abnormal lowering of the serum concentration of potassium was associated with muscular weakness and transient paralysis involving the extensor muscles of the neck, hands and feet. This patient had been given large quantities of the synthetic compound (25 mg. daily) in addition to intravenous sodium chloride and dextrose solutions before and after a nephrectomy. The abrupt onset and transient nature of the paralysis as well as the complete recovery suggest an analogy between these episodes and those noted in patients with familial periodic paralysis in which the serum potassium level has also been observed to be low during an attack.[11] Recent examination of this patient reveals no muscular weakness or incapacity. Such untoward

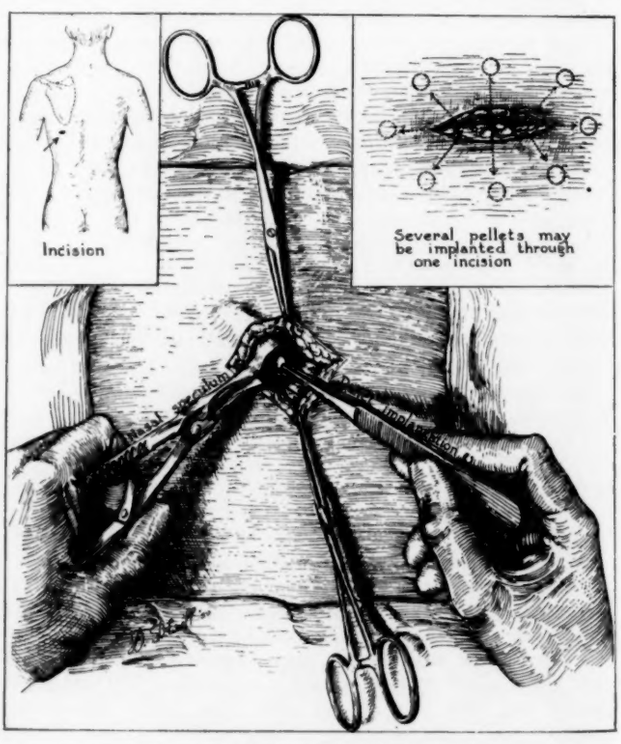

Fig. 2.—Technic of pellet implantation.

10. Thorn, G. W.; Howard, R. P., and Emerson, Kendall, Jr.: Treatment of Addison's Disease with Desoxycorticosterone Acetate, a Synthetic Adrenal Cortical Hormone (Preliminary Report), J. Clin. Investigation **18**: 449 (July) 1939.

11. Aitken, R. S.; Allott, E. N.; Castleden, L. I. M., and Walker, Mary: Observations on Case of Familial Periodic Paralysis, Clin. Sc. **3**: 47 (July) 1937.

effects may be obviated easily by properly regulating the dose of desoxycorticosterone acetate. Added potassium citrate or foods rich in potassium (bananas, prunes and raisins) may also be given with advantage.

7. The close chemical relationship between desoxycorticosterone and progesterone suggests that desoxycorticosterone acetate treatment might possibly result in progestational changes in female patients with Addison's disease. To date, however, no abnormality in the menstrual cycle has been observed as the result of treatment with the synthetic adrenal principle. In several patients increased turgor of the breasts has been noted after continued treatment. It appears probable that this change may be accounted for in part by the increased accumulation of extracellular fluid.

It is to be noted that most of the complications which have been enumerated may be avoided if reasonable care is exercised in the administration of desoxycorticosterone acetate and sodium chloride.

SUBCUTANEOUSLY IMPLANTED PELLETS OF CRYSTALLINE DESOXYCORTICOSTERONE ACETATE [12]

In addition to daily intramuscular injections of the drug in oil it has been observed [8] that subcutaneously implanted pellets of crystalline desoxycorticosterone acetate provide an efficacious and very efficient method of administration. The advisability of implantation may be considered after a patient has been maintained in good condition for one month or more by means of daily injections of the medicament in oil. Pellets should be implanted only after careful clinical control has permitted the daily requirement of the drug to be determined accurately. It requires at least four to eight weeks to establish with certainty the optimum daily dose of the substance in oil.

1. *Calculation of Pellet Requirement.*—The pellet requirement of desoxycorticosterone acetate is calculated from the optimum daily maintenance dose, one pellet of from 100 to 150 mg. being substituted for each 0.4 to 0.5 mg. of the material necessary for maintenance. The daily maintenance dose of desoxycorticosterone acetate in oil is determined during a period in which the patient is receiving a constant quantity of added sodium chloride (from 4 to 8 Gm. daily). It is desirable to use sodium chloride therapy if pellets are to be implanted, since at any future date reduction or withdrawal of the sodium chloride provides a very convenient means of balancing any excess of desoxycorticosterone acetate. Pellets weighing from 100 to 150 mg. should provide effective therapy for from nine to twelve months (fig. 1).

2. *Technic of Pellet Implantation.*—The infrascapular region has been found to be a convenient site for the implantation of the pellets. It is imperative that strict aseptic technic be followed because of the susceptibility of addisonian patients to pyogenic infections. In all the cases reported in this paper the implantations have been carried out in the general operating rooms of the hospital.

The operative field is carefully prepared with iodine and alcohol. The site of the incision and the surrounding subcutaneous tissue are infiltrated with procaine hydrochloride 1:200. A transverse incision (from 3 to 7 cm. in length) is made a few centimeters below the inferior spine of the scapula and extending toward the posterior axillary line. A number of pockets are then made in the subcutaneous fat (fig. 2). These radiate in all directions from the margins of the cutaneous incision and average 4 cm. in depth. After hemostasis has been obtained, each opening in the subcutaneous fat is held far enough apart by a nasal dilator to permit a pellet to gravitate to the bottom of the pocket without the use of force. This is important, for if the opening is narrow the operator may crush the pellet when trying to insert it. If it is desired to mark a particular pellet, one can easily do so by attaching a silver clip to it with a fine silk suture. After all the pellets have been placed, the wound is closed with subcuticular sutures of fine black silk. It is possible to insert as many as fifteen pellets through a single incision. In no instance has there been suppuration, discernible inflammatory reaction or extrusion of a pellet.

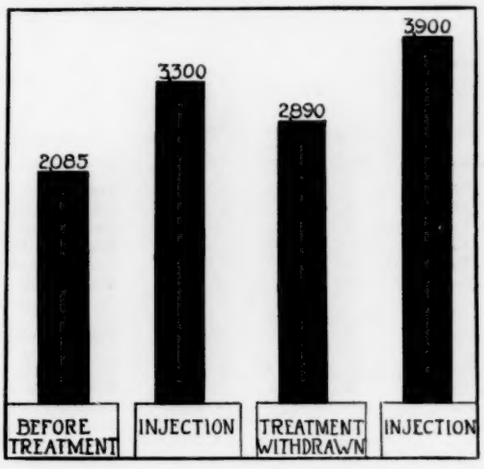

Fig. 3.—Changes in plasma volume of F. M. which occurred during injection treatment with the synthetic adrenal cortical factor. Treatment was withdrawn for seventy-two hours. The figures represent cubic centimeters.

RESULTS OF TREATMENT

Desoxycorticosterone acetate treatment (either daily oil injections or subcutaneous implantation of crystalline pellets) resulted in striking changes in patients with Addison's disease, i. e. (*a*) increase in weight, (*b*) increase in plasma volume (fig. 3), (*c*) positive sodium and chloride balance, (*d*) increased renal excretion of potassium and phosphate, (*e*) restoration of plasma concentrations of sodium, chloride, potassium and nonprotein nitrogen to normal levels, (*f*) improved muscular strength and sense of well-being and (*g*) elevation of blood pressure. These changes have been described in detail in a previous communication. Patients were not restored completely to normal activity until the abnormality in the serum concentration of electrolytes had been corrected. However, it is to be noted that the restoration of the concentration of sodium, chloride and potassium of the serum to normal values was not always associated with the complete disappearance of clinical symptoms (table 3).

At the present time twenty of thirty consecutively treated patients in this study are leading a life of normal activity and are working or able to work regularly (table 3). Two additional patients (J. P. and V. R.) were treated with daily injections of desoxy-

12. The crystalline desoxycorticosterone acetate used in this investigation has been prepared and pressed into pellets in our laboratory and more recently by Ciba Pharmaceutical Products, Inc. Although the results obtained with tablet-shaped pellets weighing approximately 125 mg. are very encouraging, the pellets will not be made available commercially until further clinical experience has accumulated to justify the conclusion that these pellets and this new therapeutic procedure are safe. For purposes of clinical investigation it is suggested that the implantation treatment should be undertaken only with uniformly pressed, shaped and assayed sterile pellets after a careful study of the case has indicated the exact medicinal requirement.

corticosterone acetate for short periods (ten to forty-five days respectively) with considerable clinical improvement. However, since it was possible to maintain both of these patients in good condition by means of added sodium chloride alone, desoxycorticosterone acetate therapy has not been continued.

Six patients in the group of thirty are greatly improved but are as yet unable to resume all normal activity. In two of these patients there exists a complication which limits the extent of improvement which might otherwise be expected: i. e., extensive healed pulmonary tuberculosis (patient 20) and active tuberculous infection of one kidney (patient 7).

(10 mg. daily) and added sodium chloride (10 Gm. daily) resulted in striking improvement, and the patient was maintained in good condition. Subsequently she was found to be pregnant. In view of the greatly improved clinical condition following continued synthetic desoxycorticosterone acetate therapy, the advisability of a therapeutic abortion was considered. Dilation and curettage of the uterus were performed during the third month of pregnancy. Postoperatively pneumonia developed, from which she completely recovered. The presence of pelvic phlebitis further complicated the convalescence. Throughout this period of rather severe illness her blood pressure did not fall below 95 mm. and she showed no evidence of adrenal insufficiency. During the fourth week of convalescence she had a chill, followed by high fever and

TABLE 3.—*Observations on Thirty Patients*

Patient	Sex	Age	Duration of Symptoms, Years	Severity of Disease	Probable Etiology	Complications	Blood Pressure, Mm. Hg		Body Weight, Kg.		Desoxycorticosterone Acetate Therapy		
							Initial*	Subsequent	Initial*	Subsequent	Daily Injections, Days	Implanted Pellets, Days	Total Duration of Therapy, Days
1. P. W.	♂	34	7	++++	Nontuberculous	0	95/60	128/ 84	51.0	58.2	106	338	444
2. M. M.	♀	27	3	++++	Nontuberculous	0	85/72	130/ 92	51.3	54.0	0	444	444
3. E. V.	♂	39	4	++++	Nontuberculous	0	94/60	145/ 90	54.4	62.8	206	237	443
4. C. N.	♀	34	3	+++	Nontuberculous	0	94/60	132/ 96	55.9	63.2	84	353	437
5. F. M.	♂	32	3	+++	Nontuberculous	0	92/60	160/105	61.2	66.0	147	288	435
6. J. Z.	♂	19	3	++++	Tuberculous	Urogenital tuberculosis (active)	85/60	120/ 90	39.3	45.5	91	338	429
7. A. S.	♂	32	4	+++	Tuberculous	Urogenital tuberculosis (active)	104/68	136/ 70	57.4	57.2	129	264	393
8. J. S.	♂	29	3	+++	Nontuberculous	0	92/70	135/ 90	55.2	70.4	207	221	428
9. J. H.	♂	22	2	++++	Nontuberculous	0	100/60	126/ 85	63.2	67.5	11	324	335
10. D. B.	♂	33	2	++++	Nontuberculous	0	108/70	131/ 90	64.7	73.6	11	320	331
11. I. B.	♀	45	5	+++	Nontuberculous	Hepatic disease	110/74	170/100	48.0	48.4	35	264	299
12. J. D.	♂	68	2	+++	Nontuberculous	Hypertrophic arthritis	108/70	120/ 80†	62.5	69.0†	50	...	50
13. S. W.	♀	54	2	+++	Nontuberculous	Hypertrophic arthritis	120/78	148/ 85	58.5	64.4	13	257	270
14. R. W.	♂	56	2	++	Nontuberculous	Hypertrophic arthritis	108/70	138/ 80	71/2	72.7	28	217	245
15. Y. E.	♀	38	2	++++	Nontuberculous	0	102/74	155/ 90	51.9	52.9	6	213	219
16. W. B.	♂	20	2	+++	Nontuberculous	Pneumonia	92/74	132/ 94	41.5	41.5	10	202	212
17. A. H.	♀	37	3	++++	Nontuberculous	0	90/58	126/ 82	40.0	45.6	55	156	211
18. R. M.	♀	34	2	++++	Nontuberculous	0	60/40	132/ 95	49.6	56.0	47	136	183
19. F. H.	♂	22	1	++++	Nontuberculous	0	95/54	140/ 90	59.5	70.0	29	95	124
20. A. T.	♂	48	3	+++	Tuberculous	Preexisting hypertension	118/80	166/100	60.0	64.1	14	107	121
21. I. H.	♀	34	3	++++	Tuberculous	0	108/70	124/ 88	53.0	56.9	25	47	72
22. C. E.	♂	67	4	++++	Nontuberculous	0	104/78	130/ 90	51.2	54.4	19	47	66
23. A. K.	♀	30	1	++++	Nontuberculous	Pregnancy	90/60	120/ 60†	54.8	59.4†	60	..	60
24. F. G.	♀	29	2	++	Tuberculous	0	104/65	116/ 80	46.8	48.7	221	16	237
25. D. W.	♀	26	7	+++	Nontuberculous	0	105/70	115/ 75	60.0	61.0	73	..	73
26. M. B.	♀	31	4	++++	Nontuberculous	0	90/66	105/ 66	49.4	51.0	25	26	51
27. C. C.	♀	41	2	+++	Nontuberculous	0	124/76	154/110	43.1	44.6	122	16	138
28. M. P.	♀	34	2	++	Nontuberculous	0	102/80	115/ 80	71.8	71.5	101	..	101
29. S. P.	♂	27	1	++++	Nontuberculous	0	120/75	140/100	70.9	71.6	76	15	91
30. H. M.	♂	45	3	++	Nontuberculous	0	96/54	110/ 60	66.0	70.8	28	..	28

* Values at the time desoxycorticosterone acetate treatment was substituted for some other form of therapy.
† Value fourteen days after treatment with the synthetic adrenal cortical principle was instituted.

The clinical condition of three of the remaining six patients (11, 15 and 27) has been improved, but it is still necessary for them to lead a life of restricted activity (table 4, summary). In addition patient 22, aged 67, who was admitted to the hospital in crisis, is improved but as yet he is unable to do more than be up and about his bedroom despite continued treatment for ten weeks. In all these cases the blood pressure has been restored to levels which are normal or in some instances higher than normal, and the concentration of electrolytes in the blood serum is within normal range (table 3).

Patient 23 died during the course of an intercurrent infection. She was first observed during a typical crisis of adrenal cortical insufficiency. Treatment with desoxycorticosterone acetate constitutional symptoms. At this time many colonies of colon bacilli were found in the blood stream, and the patient ultimately succumbed to a colon bacillus septicemia. Autopsy revealed pelvic peritonitis as well as an almost complete absence of adrenal cortical tissue.

It was thought that this patient had been restored to health from an adrenal crisis and maintained in good condition with the synthetic adrenal factor and added sodium chloride. She had also been maintained in relatively good condition during a major operation and for a period of three weeks postoperatively, despite unusual and severe complications, only to succumb finally to a colon bacillus septicemia.

Patient 12, a white man aged 68, was benefited by the synthetic adrenal principle during his residence in the hospital. However, extensive osteo-arthritic changes in his knees, hips

and shoulders confined him to bed. Withdrawal of the drug precipitated a relapse despite the continued administration of added sodium chloride. Resumption of desoxycorticosterone treatment again resulted in improvement. After returning to his home in Kentucky he discontinued the synthetic adrenal factor despite urgent medical advice to the contrary. Approximately two months after discontinuing treatment with the synthetic compound he died, apparently of adrenal insufficiency. Permission for postmortem examination was not obtained.

BLOOD PRESSURE

A marked increase in blood pressure was observed in all of the patients treated with desoxycorticosterone acetate (either daily injections of the substance or pellets implanted subcutaneously). Particularly noteworthy was the appreciable rise in the diastolic pressure. It is of some interest that in most cases there occurred first a considerable increase in plasma volume (hemodilution) unaccompanied by any significant change in blood pressure. Later, after from four to twelve weeks of continued desoxycorticosterone and sodium chloride therapy the rise in blood pressure was marked in many instances. In most cases a rise in blood pressure was associated with evidence of marked clinical improvement. In some instances, however, hypertensive levels were attained without complete restoration of the patients to full normal activity.

Myocardial failure occurred in two cases (15 and 11) six weeks and twelve weeks respectively after treatment with the synthetic product (approximately 10 mg. daily) and added sodium chloride (10 Gm. daily) had been instituted. At this time the patients had been discharged from the hospital and were living in rural districts where constant medical supervision was not possible. Patient 15 was known to have had evidence of preexisting myocardial damage which antedated treatment with desoxycorticosterone acetate. Patient 11 did not have signs of circulatory failure until her blood pressure had reached a hypertensive level (175 systolic, 95 diastolic). It is possible that this patient may have had preexisting vascular disease, although this cannot be stated with certainty. There is no doubt, however, that the striking increase in plasma volume, blood pressure, body weight and activity which followed continued treatment in both cases was a major factor in precipitating the myocardial failure.

Withdrawal of sodium chloride from the diet, restriction of fluids, absolute bed rest and digitalization fortunately resulted in marked improvement in both cases. It is quite possible that these vascular accidents and some of those reported by other investigators [12] might have been avoided if the patients could have been followed more carefully after discharge from the hospital.

The striking and continued improvement which has been observed in the majority of patients treated for

Treated with Desoxycorticosterone Acetate

Present Therapy		Present Status										
Desoxycorticosterone Acetate	Added Sodium Chloride	Hematocrit Volume of Packed Cells, %	Serum Sodium, mEq./L.	Serum Potassium, mEq./L.	Serum Chloride, mEq./L.	Serum CO_2 Combining Power, mEq./L.	Blood Nonprotein Nitrogen, Mg./100 Cc.	Blood Sugar, Mg./100 Cc.	Total Protein Serum, Gm./100 Cc.	Condition	Occupation	Activity
Pellets (16)	5 Gm.	40.1	138.0	5.6	100.4	24.6	27	87	6.5	Good	Clergyman	++++
Pellets (7)	10 Gm.	33.6	143.7	4.7	111.2	24.3	22	84	5.6	Good	Housewife	+++
Pellets (16)	None	38.1	137.7	4.6	104.0	23.3	28	84	5.5	Good	Shopkeeper	++++
Pellets (5)	None	41.3	137.7	4.5	105.6	24.6	34	77	5.3	Good	Housewife	++++
Pellets (13)	None	35.8	138.8	5.0	105.2	24.6	31	71	5.9	Good	Manual laborer	++++
Pellets (13)	8 Gm.	38.3	144.0	3.5	95.2	32.4	23	81	6.4	Good	Unemployed	++++
Pellets (8)	10 Gm.	37.5	145.4	6.1	106.2	28.4	26	80	5.3	Fair	Unemployed	+++
Pellets (9)	None	41.9	141.9	4.7	99.0	31.6	30	85	5.4	Good	Office worker	++++
Pellets (4)	None	40.1	145.4	4.3	107.6	21.7	28	95	5.2	Good	Office worker	++++
Pellets (7)	None	39.6	139.4	4.7	103.6	24.3	27	74	5.7	Good	Office worker	++++
Pellets (14)	None	40.7	134.3	3.1	100.0	23.8	32	87	7.6	Poor	Housewife	++
.....	.....	....	.....	...	.....	....	..	..	...	Died (discontinued therapy)		
Pellets (8)	None	39.0	143.4	5.4	103.6	24.3	34	91	6.4	Good	Housewife	+++
Pellets (9)	4 Gm.	41.1	135.3	5.9	107.2	23.8	28	76	5.7	Good	Unemployed	+++
Pellets (10)	None	35.2	138.9	4.7	103.8	27.1	25	69	5.9	Fair	Housewife	++
Pellets (5)	None	44.0	138.7	4.3	105.8	26.8	30	76	6.1	Good	Farm chores	+++
Pellets (6)	None	32.8	143.5	4.2	103.6	25.8	24	80	5.6	Fair	Housewife	+++
Pellets (8)	None	40.0	142.6	3.8	107.6	27.1	23	90	6.0	Good	Housewife	++++
Pellets (8)	None	39.7	139.3	3.6	114.2	30.0	28	88	5.6	Good	Office worker	++++
Pellets (2)	None	41.6	144.2	5.2	103.4	31.8	30	80	6.0	Fair	Shopkeeper	+++
Pellets (4)	8 Gm.	38.0	143.4	4.7	104.8	24.6	28	75	5.5	Good	Unemployed	++++
Pellets (5)	None	40.1	138.8	4.9	100.2	24.3	28	90	5.3	Poor	Hospital patient	+
.....	.....	....	.....	...	.....	....	..	..	...	Died (intercurrent infection)		
Pellets (5)	2 Gm.	37.7	137.6	5.0	107.6	22.9	24	78	5.7	Good	Stenographer	++++
Daily injection, 2.5 mg.	4 Gm.	....	.....	...	.....	....	..	..	...	Good	Stenographer	++++
Pellets (4)	None	31.3	137.3	4.6	108.4	25.0	26	75	5.8	Good	Unemployed	+++
Pellets (8)	5 Gm.	33.7	139.8	5.3	102.6	25.4	25	85	5.7	Poor	Housewife	++
Daily injection, 2.5 mg.	6 Gm.	....	.....	...	.....	....	..	..	...	Good	Housewife	++++
Pellets (10)	2 Gm.	49.8	144.6	4.5	105.2	27.9	26	86	5.4	Good	Unemployed	+++
Daily injection, 1.5 mg.	None	....	.....	...	.....	....	..	..	...	Good	Garageman	++++

13. Wilder, R. M., and Rynearson, E. H.: Personal communication to the authors. Ferrebee, Ragan, Atchley and Loeb.[4]

periods as long as from six to eighteen months with the synthetic adrenal principle strongly suggests that some abnormal disturbance must have existed in the cardiovascular system of those patients in whom signs and symptoms of circulatory failure developed during treatment. Several possibilities are apparent: (*a*) preexisting myocardial, valvular or vascular disease unrelated to Addison's disease; (*b*) permanent myocardial or vascular disease resulting from a long-continued state of adrenal insufficiency; (*c*) hypoglycemia; (*d*) alteration in electrolyte concentration, i. e. high sodium and low potassium levels, and (*e*) a specific metabolic disturbance in cardiac muscle associated with adrenal insufficiency not corrected by desoxycorticosterone acetate treatment. Certainly the grave nature of these possible complications indicates the need for great care in instituting treatment with the synthetic adrenal factor.

INTERCURRENT INFECTIONS

The effectiveness of desoxycorticosterone acetate treatment in supporting patients with Addison's disease during the course of intercurrent infections and throughout operations deserves special note. The clinical condition of patient 6 was so much improved after this treatment that a nephrectomy was performed because of extensive active tuberculous infection of one kidney. At present, approximately one year after operation, the patient is in excellent condition. It is believed that this represents the first reported case in which a nephrectomy [14] has been successfully performed on a patient with far advanced Addison's disease. Patient 16 was sustained during a series of acute infections which consisted of a streptococcic throat infection associated with erythema nodosum and complicated later by pneumonia. Patient 23 was maintained in relatively good condition for a period of several weeks following postoperative complications of pneumonia and pelvic phlebitis, although she succumbed ultimately to a colon bacillus septicemia. Several patients have had infections of the upper respiratory tract from which they have recovered rather promptly in contrast to delayed recovery from attacks previous to treatment. Patient 7 sufficiently improved with the synthetic adrenal factor to permit the removal of a tuberculous epididymis. At present, eighteen months after desoxycorticosterone acetate treatment was instituted, a tuberculous sinus tract has healed completely, his right wrist joint, which was the site of an active tuberculous infection, is greatly improved and his general condition is remarkably good.

TABLE 4.—*Summary of Treatment with Synthetic Adrenal Cortical Factor*

Number of patients	30 (males 16, females 14)
Days of treatment	247 (mean) 20-444 (range)
Blood pressure	
Before treatment	98/67 mm. of Hg (mean)
At present	134/89 mm. of Hg (mean)
Body weight	
Before treatment	54.2 Kg. (mean)
At present	58.8 Kg. (mean)
Present condition of patients	
Good	21
Fair	4
Poor	3
Died during treatment	1
Died after treatment discontinued	1
Total	30

CARBOHYDRATE METABOLISM

Prior to the substitution of the synthetic adrenal principle a majority of the patients in this study were found to have a flat type of dextrose tolerance (oral) curve as well as a marked predisposition to develop hypoglycemia three or four hours after receiving dextrose either orally or intravenously. It is significant that not all untreated patients with typical Addison's syndrome showed these changes.

The mean value for fasting blood sugar for all the patients before treatment was 80 mg. per hundred cubic centimeters (Folin-Wu method). Treatment with desoxycorticosterone acetate did not significantly affect the fasting blood sugar level. In nearly all the cases long-continued treatment (from six to eighteen months) with the synthetic compound was followed by a tendency for the dextrose tolerance (oral) curve to return to normal values with some amelioration of the hypoglycemia which had been observed to occur after the administration of dextrose. In contrast to the rapid restoration (in from one to three weeks) of serum electrolyte concentration and the somewhat slower (from four to eight weeks) but complete restoration of blood pressure to the normal level, changes in carbohydrate metabolism occurred much more slowly (after six to eighteen months of continued treatment) and were much less complete.

It is possible that the improvement in carbohydrate metabolism which was noted may have been merely an accompaniment of the great improvement in the clinical condition of the patients and not necessarily the result of a specific effect of desoxycorticosterone acetate on carbohydrate metabolism. Further studies are necessary before this question can be answered.

PIGMENTATION

Continued treatment (from six to fifteen months) with the synthetic adrenal cortical factor has been followed by an appreciable decrease in pigmentation in twelve of the cases reported in this study. To date, however, complete disappearance of abnormal pigmentation has not been observed in any instance.

COMMENT

Desoxycorticosterone is one of several crystalline compounds which have been isolated from adrenal cortical extracts. It is by no means certain that any one of the compounds thus far isolated represents the active form of the naturally occurring hormone. As tested by its potency in maintaining the life of adrenalectomized animals, desoxycorticosterone is the most active of all the compounds thus far identified. Other compounds less active in life-maintaining effect have been shown to possess marked activity in other respects. Long, Katzin and Fry [15] and Jensen and Grattan [16] have shown the marked glycotropic effect of corticosterone and dehydrocorticosterone, and Ingle [17] has demonstrated the effectiveness of these two compounds in maintaining muscular activity. It is also possible that some of the

14. The successful nephrectomy was performed by Dr. Lloyd Lewis, associate in the Department of Urology, Johns Hopkins University and Hospital.

15. Long, C. N. H.; Katzin, B., and Fry, Edith G.: The Adrenal Cortex and Carbohydrate Metabolism, Endocrinology **26**: 309 (Feb.) 1940.

16. Jensen, H., and Grattan, J. F.: The Identity of the Glycotropic (Anti-Insulin) Substance of the Anterior Pituitary Gland, Am. J. Physiol. **128**: 270 (Jan.) 1940.

17. Ingle, D. J.: The Work Performance of Adrenalectomized Rats Treated with Corticosterone and Chemically Related Components, abstr., Am. J. Physiol. **126**: 543 (July) 1939.

so-called "inactive" compounds may also possess activity when appropriate tests are devised. To date desoxycorticosterone is the only compound which has been synthesized and the only crystalline compound which can be obtained in quantities sufficient for clinical trial.

Thus far the use of desoxycorticosterone acetate has been restricted to the treatment of patients with classic signs and symptoms of Addison's disease. This therapy is indicated if patients with Addison's disease are unable to resume normal activity when treated with adequate quantities of sodium chloride and a diet low in potassium. The demonstration that the administration of excessive doses of the adrenal cortical factor to normal animals resulted in adrenal cortical atrophy scarcely justifies withholding specific desoxycorticosterone therapy from patients with Addison's disease.

It is evident that the quantity of supplementary sodium chloride administered to such patients must be carefully regulated during treatment with desoxycorticosterone acetate. Excessive quantities of the synthetic adrenal cortical principle and sodium chloride may result in the appearance of edema, hypertension and, in some instances, signs of congestive heart failure. Occasionally the appearance of edema or an excessive rise in blood pressure may necessitate a reduction in the dose of desoxycorticosterone acetate before the maximum therapeutic effect has been attained. Since the great increase in blood volume, the rise in blood pressure and the increased physical activity which follow the institution of treatment with the synthetic compound rather suddenly place a considerable additional load on the cardiovascular system, it is advisable to restore most patients rather slowly to normal activity. The grave nature of these possible complications indicates the need for care in the institution of treatment and the necessity for continued medical supervision.

It has been noted that in a majority of patients with Addison's disease hypoglycemia readily develops three or four hours after either oral or intravenous administration of dextrose.[18] An appreciation of this fact is necessary if serious complications are to be avoided after the administration of dextrose solutions to patients in adrenal crisis. The delayed and incomplete effect of desoxycorticosterone acetate therapy in correcting this disturbance in carbohydrate metabolism is in marked contrast to the prompt and striking effect on electrolyte metabolism and blood pressure.

The greatest single obstacle to the successful treatment of adrenal cortical insufficiency is the difficulty with which the diagnosis is established early in the course of the disease. Several diagnostic procedures have been suggested.[19] All of these have some disadvantage or limitation. It is possible that treatment with a minimal effective dose of crystalline hormone for a limited period may be of aid in diagnosis. However, it is by no means certain that a favorable response to such therapy is necessarily specific.

SUMMARY AND CONCLUSIONS

Treatment with the synthetic adrenal cortical principle (desoxycorticosterone acetate) appears to be an efficacious form of specific therapy for patients with Addison's disease. The uniform potency and stability of the crystalline product permit more exact regulation of therapy. The relative inexpensiveness of treatment with desoxycorticosterone acetate will permit most patients to afford adequate therapy.

Striking and continued clinical improvement was observed in twenty-one of thirty cases reported in this study. Clinical improvement was associated with a retention of sodium, chloride and water, an increased renal excretion of potassium, a marked increase in plasma volume, restoration of the concentration of sodium, chloride and potassium of the plasma to normal values, an increase in body weight and an increase in both systolic and diastolic blood pressures. Complete rehabilitation of the patients did not occur until the disorder in electrolyte metabolism had been corrected and the blood pressure restored to a normal level. However, clinical improvement did not always parallel restoration of the plasma concentration of electrolytes and the return of blood pressure to a normal level.

The effect of desoxycorticosterone acetate therapy in restoring carbohydrate metabolism to normal was neither as prompt nor as complete as the effect in correcting the disorder in electrolyte metabolism and in raising the blood pressure. The predisposition of patients with Addison's disease to have marked hypoglycemia following the oral or parenteral administration of dextrose solutions indicates the need for extreme care in the use of these solutions in the treatment of adrenal crisis.

The great increase in blood volume, the rise in blood pressure and the increased physical activity which follow the institution of desoxycorticosterone acetate therapy place a considerable additional load rather suddenly on the cardiovascular system. For this reason it is recommended that the activity of patients be restricted during the first few weeks of treatment.

It is apparent that the quantity of supplementary sodium chloride must be regulated carefully throughout the period of desoxycorticosterone acetate treatment. The use of excessive doses of the synthetic compound and added sodium chloride may result in the appearance of edema, hypertension and signs of congestive heart failure. The incidence of these untoward reactions may be greatly reduced if reasonable care is exercised in the regulation of the dosage of the adrenal cortical factor and added sodium chloride.

Pellets of crystalline desoxycorticosterone acetate, implanted subcutaneously, may be substituted successfully for daily intramuscular injections of the drug in oil. The implantation of pellets not only obviates the necessity for daily oil injections but also provides a more constant supply of the material and results in a considerable saving (from 30 to 40 per cent) in the quantity required. A single implantation of pellets (each weighing approximately 125 mg.) should supply continuous and adequate therapy for a period of nine to twelve months. The number of pellets which are needed may be calculated accurately from the daily dose of desoxycorticosterone acetate in oil required to maintain the patient in good condition. One pellet (125 mg.) is required for each 0.4 to 0.5 mg. of the compound in oil. Implantation of pellets should not be considered until a patient has been maintained in good condition for a period of from six to eight weeks by means of a daily injection of desoxycorticosterone acetate in oil and until the daily quantity of the substance necessary for satisfactory maintenance has been determined accurately.

18. Thorn, G. W.; Koepf, G. F.; Kuhlmann, D., and Olsen, E. F.: A Study of Carbohydrate Metabolism in Experimental Adrenal Insufficiency and in Patients with Addison's Disease, Effect of Desoxycorticosterone Acetate Treatment; abstr., Am. J. Physiol., to be published.

19. Thorn, G. W.: Adrenal Cortical Hormone Therapy, Am. J. M. Sc. **197**: 718 (May) 1939.

INCREASING SURVIVAL TIME IN ADDISON'S DISEASE

RESULTS IN SIX CASES IN WHICH A NONCOMMERCIAL PRODUCT OF THE ADRENAL CORTEX AND A HIGH SALT INTAKE WERE ADMINISTERED

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My purpose in this communication is to indicate the increased survival time of patients with Addison's disease [1] kept continuously under the influence of the Swingle and Pfiffner extract of adrenal cortex and on a high salt intake. It also demonstrates the splendid nature of the clinical results, the infrequency of crises and the high degree of rehabilitation in such patients under these conditions. This report deals with the only series of patients who have had the advantage of continuous treatment through months and years with a research preparation of adrenal cortex prepared in Professor Swingle's laboratory at Princeton University. All of the six patients so treated are living; all are in unusually good health and carrying on their jobs, even after the passage of a number of years. The average survival in these cases is almost seven years and the average time under treatment is nearly five years.

Guttman in an analysis of 566 cases collected from the literature prior to 1930, before the modern methods of treatment were available, found that the duration of life of patients with Addison's disease is 34 ± 4.4 months if simple atrophy of the adrenal glands exists and only 13.3 ± 2.5 months when the disease is tuberculous in origin. When one considers these figures, the results here recorded indicate great progress in the treatment of Addison's disease.

The patients in the present series have all suffered from a moderately severe or grave form of Addison's disease. More adequate therapy is held largely responsible for the excellent results, especially the continuous administration of a noncommercial cortical extract prepared in a research laboratory solely for experimental purposes.

The preparation of an aqueous extract of the adrenal cortex which would maintain the life of adrenalectomized cats indefinitely was announced by Swingle and Pfiffner in a brief article published in *Science*, March 21, 1931. The excellent immediate results of the application of this preparation in a small series of cases of Addison's disease was presented by Rowntree and Snell in 1931. Subsequently a commercial preparation of adrenal cortex was marketed by a large pharmaceutic house and has been used rather commonly in Addison's disease in recent years. In a large experience with both preparations it was apparent that the commercial product lacked somewhat in potency and in the dramatic effects obtained with the preparation of Swingle and Pfiffner as prepared in a research laboratory; hence this special study and this clinical report of the results obtained with the latter.

In the last decade the importance of a high salt intake and a high level of blood sodium has been emphasized. In most of the cases herein reported salt was taken freely as sodium chloride or as sodium citrate or carbonate. Unquestionably sodium has played an important role in the results obtained. Although it has permitted a decrease in the amount of cortical hormone required, in none of these cases, in my opinion, would salt alone have sufficed. The need for salt in the individual case has been variable and in some cases has seemed to be of little importance. Evidence for this opinion will become apparent in the case reports.

During the last six years more than twice this many cases of Addison's disease have been seen in consultation in medical services in various hospitals, but during this period only six cases have been continuously under my own care with administration of moderate but adequate amounts of the especially prepared Swingle and Pfiffner product. Special efforts have been made to insure the administration of the extract in sufficient amounts and at frequent intervals to preclude, as far as possible, the development of hormonal deficiency and of crises. The major effort has been to prolong survival in Addison's disease by the prevention of crises.

REPORT OF CASES

CASE 1.—W. G. McG, a white man aged 50, seen first in June 1933, in consultation with Dr. Carl Ill of Newark, N. J., at the suggestion of the late Dr. Harlow Brooks, complained of weakness, exhaustion, irritability, loss of weight and marked pigmentation. Nothing of importance was elicited from the family history. The patient stated that in the past he had suffered from pneumonia at the age of 12 and from typhoid at 23, and that in 1925 at the age of 38 he first underwent an operation at the Cleveland Clinic for the removal of a thyroid cyst (?). Two years later while on a boat he fell and sustained an injury to the left side of his chest. Pigmentation was first noted in 1927. In November 1932 he suffered a weak spell of some kind in which his lips became blue. This was followed shortly after by a general feeling of malaise, nausea, vomiting and diarrhea. His temperature was 103 F. The systolic blood pressure was recorded as 60 mm. of mercury. The condition was regarded as a crisis of Addison's disease; he was given sodium bicarbonate, cerium oxalate and at the suggestion of Dr. Harlow Brooks adrenal cortex extract in small doses, up to 4 cc. daily.

The patient was 6 feet (183 cm.) in height and weighed 160 pounds (73 Kg.). He was dark complexioned and had marked typical addisonian pigmentation over the face, forehead, neck, ears, the back of the hands and in the palmar creases. Body pigmentation generally was exaggerated but was more marked over the genitalia and over the elbows and knees, which were also covered with a whitish scurf. There was in addition striking pigmentation of the lingual and buccal mucous membrane, and many black freckles were scattered freely over the neck, face and shoulders. In the lower anterior cervical region there was a scar from a recent operation on the thyroid. The left side of the chest was poor in expansion, the breath sounds were distant and the percussion note was dull. The right side of the chest was normal on palpation, percussion and auscultation. The areola about the nipples was practically black and a supernumerary nipple was present on the right side. The abdomen was normal; no masses were felt or seen, though a pigmented scar was present in the left upper quadrant extending up over the chest in the region of the old injury. Blood pressure at this time was 94 systolic, 60 diastolic; reflexes were normal; the pulse rate was 90 and the temperature 99 F.

Laboratory data were as follows: blood urea nitrogen 16 mg., red blood cells 5,560,000, hemoglobin 86 per cent, white blood cells 6,000, polymorphonuclears 32 per cent, lymphocytes

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From the Philadelphia Institute for Medical Research in the Philadelphia General Hospital.

1. In one of the recent papers of which I was co-author, three cases of Addison's disease with survival for more than fifteen years were reported. Those three cases represent the longest survival time in the 116 cases studied at the Mayo Clinic and reported by Rowntree and Snell in 1931. In that series of cases, mildness of the disease rather than the therapy employed was held largely responsible for the prolonged survival. In the present series all the patients were much more critically ill at the time the diagnosis was made, most of them suffering from marked nausea and vomiting and emaciation, usually with the blood pressure down almost to shock levels. All the patients needed considerable amounts of the cortical extract and salt over long periods, though one of them is now in a prolonged remission.

59 per cent, eosinophils 1 per cent, basophils 2 per cent, and monocytes 6 per cent. The Wassermann reaction was negative, the basal metabolic rate +12 and urinalysis negative. The guinea pig test with inoculation of the urine was negative.

The patient was seen in consultation by Dr. John D. McLean, who regarded the thickened pleura as nontuberculous in nature. The x-ray studies made by Dr. Gregory Cole indicated nontuberculous pleural thickening. His studies also revealed calcification of the apexes of the lungs and unquestionable calcium deposits in both adrenal glands.

The patient was placed on the Princeton laboratory preparation of cortex extract, 5 cc. daily, given intravenously at first and later intramuscularly. The caloric intake was increased and he was advised to partake freely of milk, salt and water and urged to rest ten hours each night and two hours daily in bed after lunch. The patient did well from the start. The dose of cortex extract was gradually decreased to 3 cc. daily and later to 3 cc. on alternate days. The weight has increased gradually to 171 pounds (78 Kg.). Exhaustion, weakness and morning nausea disappeared entirely and by the end of the first year he began to take up his business interests as an executive in one of our largest industrial corporations.

The patient has remained ambulant and in good health throughout the intervening years. He has been seen at rather infrequent intervals during the last six and one-half years. The pigmentation is as striking as ever. Colds and mild infections have developed and have been difficult to shake off at times. Morning nausea and weakness have recurred very rarely, and only once has the patient passed through another serious crisis. The weight is now 160 pounds (73 Kg.); the patient goes to his office at least three days each week, does considerable yachting and leads generally a relatively normal life. He is fond of salt and takes considerable amounts in his food but has never pushed it to any great extent. A potassium-poor diet was rejected by him because it interfered with his appetite. He eats what he likes. He is now taking 5 cc. every three days of a triple concentrate [2] of adrenal cortex extract prepared in Professor Swingle's laboratory. He states that he is enjoying unusually good health.

CASE 2.—E. E., a white man aged 39, became ill with trouble in his spine in 1919. He visited the Mayo Clinic and was successfully treated for Pott's disease by a fusion operation in 1923. Somewhat later the glands in the right side of the neck became enlarged, necessitating local operation. The pigmentation started in 1929 and has persisted throughout the interim. In 1932, while he was in Seattle, a severe cold developed which was diagnosed pulmonary tuberculosis with cavity formation. He subsequently spent between four and six months in a sanatorium in Los Angeles. He states, however, that the bacillus of tuberculosis was never found in his sputum. While in the sanatorium for some reason he was subjected to a salt-free diet and responded very poorly. The pigmentation became more marked; an intern took his blood pressure, found it very low and suggested the possibility of Addison's disease. With this diagnosis already suggested he visited the Mayo Clinic in 1933. The diagnosis of Addison's disease was confirmed. Calcification of the apexes of both lungs and of both adrenal glands was shown by x-ray examination. The pigmentation was marked, especially on the lips. He was placed on sodium chloride and bicarbonate and in addition took adrenal cortex extract. On this regimen he proceeded to Florida and did very poorly—so badly that he consulted me in Philadelphia in April 1934. The diagnosis of Addison's disease was again confirmed. He was hospitalized in a crisis of considerable severity. He was placed on larger doses of adrenal cortex extract 5 cc. twice daily and increased amounts of salt. On this regimen he proceeded to California, where he gradually regained his health, weight and strength.

The patient was next heard from in 1935 in Detroit, where he was in a desperate condition as a result of crisis. The research preparation of cortex extract was forwarded by airplane and administered in large doses, 5 cc. daily, along with sodium chloride. On this regimen he was quickly restored to excellent health. He continued regularly on this preparation (from 3 to 5 cc. daily) along with 10 Gm. of salt and 2 Gm. of sodium bicarbonate. When for any reason the preparation of cortex extract from the Princeton Laboratory was not available he returned temporarily to 8 cc. of the commercial product daily.

Through the last five years this patient has carried on a moderately successful business which has taken him to almost every state in the Union. He has spent part of each winter in the South. While under treatment he married and now has two normal children. He is somewhat thinner than normal, weighing 112 pounds (51 Kg.), is still quite pigmented and maintains a systolic pressure in the neighborhood of 100 mm. of mercury. He regards himself as moderately well while taking 3 cc. of the Princeton preparation daily.

During the fall a severe cold developed, complicated with infection of the middle ear. The dose of the Princeton prepared extract was increased temporarily and the patient has made a satisfactory recovery.

CASE 3.—H. G. A., a white man aged 20, was seen in consultation with Dr. Silbert at the Mount Sinai Hospital, New York, in August 1935. He was suffering from both Buerger's and Addison's disease. Arrangements were perfected whereby Princeton prepared cortex extract was made available. Under its influence the patient made so remarkable a recovery that the case was reported in detail by Dr. Silbert in THE JOURNAL, Feb. 13, 1937.

The patient was in excellent health until the summer of 1934, when he complained of pain in the toes of the left foot. This progressed and eventually the patient presented the typical picture of thrombo-angiitis obliterans (Buerger's disease). His weight dropped from 185 pounds (84 Kg.) in 1933 to 125 pounds (57 Kg.) in April 1935. The left popliteal artery was closed. The diagnosis of thrombo-angiitis obliterans was made and treatment was begun with intravenous injections of 5 per cent sodium chloride solution, which resulted in the healing of the foot. While under treatment with hypertonic solution of sodium chloride he complained of weakness and occasional vomiting spells. He also stated that during the preceding three months there had been a gradual increase in the pigmentation of his face. He suffered also from diarrhea.

Examination revealed pigmentation of the mucous membrane of the mouth, and the blood pressure was found to be 80 systolic, 50 diastolic. A diagnosis of Addison's disease was made and the patient was readmitted to the hospital.

Dr. Silbert reported that "at this time his weight was 107 pounds (48.5 Kg.). There was striking pigmentation of the face, mucous membrane, chest and back, the extensor surfaces of the elbows and the anal fold. There were typical black freckles in these areas. The systolic blood pressure continued to range between 80 and 95. X-ray examination of the chest and the abdomen with particular reference to the adrenals failed to show any evidence of tuberculosis. The blood urea was 14 mg. per hundred cubic centimeters, blood sugar 75 mg., blood chlorides 540 mg. and hemoglobin 70 per cent. Many urine examinations were negative. The patient continued to be treated with injections of hypertonic salt solution and in addition was given 6 Gm. of sodium chloride in enteric coated capsules by mouth. He was placed on a high calory diet with increased salt and received vitamins and 30 grains (2 Gm.) of saccharated ferrous carbonate three times a day. He was also given injections of commercial adrenal cortex extract 2 cc. every other day. He continued to lose strength and his weight went down to 93 pounds (42 Kg.).

"At this time (August 1935) the patient was seen in consultation by Dr. Leonard G. Rowntree, who confirmed the diagnosis of Addison's disease. He stated that the history of the patient, his weight loss, the blood pressure, the pigmentation (buccal, labial, cutaneous) and the black freckles were all compatible with Addison's disease. The weight loss was about what he would expect from the duration and severity. He could discern no clinical evidence of tuberculosis or syphilis. The cause was not determined. The combination of thrombo-angiitis obliterans with Addison's disease was unique in his experience. It might be due to atrophy on a vascular basis. The outlook was grave, he said, but not hopeless so far as Addison's disease is concerned.

"Another adrenal extract, made by the method of Swingle and Pfiffner, was obtained through Dr. Rowntree and the

2. Concentrations have been prepared and are being tried clinically.

patient was started on 2 cc. of this substance twice a day. With the beginning of this treatment, his weight began to increase and his general condition improved. The blood pressure increased to 100 systolic, 60 diastolic, and remained at this level. At the time of his discharge from the hospital on October 19 his weight was 105 pounds (47 Kg.). His hemoglobin was 80 per cent and the red blood cell count 4,400,000. Injections of hypertonic saline solution were continued at the office twice a week and the patient took injections of 5 cc. of this adrenal extract daily. Between October 1935 and March 1936 his weight increased to 140 pounds (63.5 Kg.). His walking improved strikingly and he was able to walk ten blocks at a fair pace without pain in his left foot. The left foot remained healed. The oscillometer readings increased to calf, left ¾, right 4; ankle, left ¼, right 2½. The systolic blood presure continued to be about 100.

"In April 1936 the patient developed an acute catarrhal icterus. He was readmitted to the hospital at this time. In addition to the icterus, enlargement of the spleen and liver was noted. Intravenous injections of 5 per cent dextrose in physiologic solution of sodium chloride were substituted for the hypertonic salt solution, and the other medication was continued as before. The dose of adrenal extract was increased to 10 cc. daily. The jaundice cleared up completely in a few weeks, and the liver and spleen returned to normal size. Following the suggestion of Wilder and his co-workers at the Mayo Clinic a low potassium diet was prescribed. The patient was discharged from the hospital at the end of May weighing 142 pounds (64 Kg.). He has continued in excellent general condition to date. . . .

"It is interesting to note the unusually good effect that followed the employment of the adrenal extract of Swingle and Pfiffner." Throughout the early course of the Addison's disease the patient received a high salt intake, intravenous salt injections and 6 Gm. of salt extra each day, along with commercial adrenal cortex extract, and continued to lose ground throughout. When, however, 5 cc. of the research laboratory extract was substituted for the commercial preparation "the patient at once began to improve. His weight rapidly increased from 93 to 140 pounds (from 42 to 63.5 Kg.). This is striking evidence of the value of the Swingle and Pfiffner preparation."

The patient continued to improve, continued his college education and became entirely rehabilitated. He reported by letter in September 1939, stating that he was entirely well, does a full day's work and plays tennis. The only symptom of Addison's disease now present is pigmentation. The weight is 180 pounds (82 Kg.) and the systolic blood pressure 114 mm. of mercury.

The patient was seen last on Oct. 20, 1939. The pigmentation was marked and characteristic. The patient was in a remission and taking small amounts of salt only. He was advised to continue a high salt intake and small injections of adrenal cortex extract 3 cc. twice weekly.[2a]

CASE 4.—Mrs. J. L., a white woman aged 36 (seen first in consultation with Dr. Solon Bernstein of Mount Sinai Hospital, New York, in February 1936 and later on several occasions with Dr. Robert T. Frank), on my first visit complained of general asthenia and debility, increased pigmentation of the skin, anorexia and moderate nausea and vomiting. She represented a typical case of Addison's disease. The family history revealed nothing of importance. Past illnesses were of interest in that fourteen years previously she suddenly became hoarse and on examination tuberculous laryngitis was discovered. Shortly thereafter an attack of pleurisy developed, and roentgenologic studies revealed bilateral pulmonary tuberculosis. Cough was infrequent; at times the mucus was definitely blood tinged. She spent several months each year in Colorado, and nine years ago the tuberculosis was considered arrested. She was married eleven years ago and has two children, both living and well. She remained relatively well for some years. About four and one-half years ago, following prolonged exposure to the sun, a brownish pigmentation appeared over both cheeks. It persisted and later spread over the neck and shoulders. In April 1935 intermittent pain developed in the left lower quadrant, associated with the menses. An oophorectomy on the left was performed by Dr. Robert T. Frank and both tubes were ligated. Pigmentation as described was noted, and the systolic blood pressure was recorded as 105 mm. During the next six months she was relatively well and occasionally rode horseback but complained of a great deal of fatigue.

In October 1935 the weight loss became more pronounced and the exhaustion more marked and there developed morning nausea, paresthesias of the fingers and toes and moderate insomnia. The pigmentation became more intense and more widely distributed. An interesting observation made at this time was that following salty foods (such as caviar, anchovies and kippers) she felt a transient buoyancy. The blood pressure was still 105 mm. of mercury. Because the clinical manifestations persisted she was admitted to the hospital for a second time. During the second visit I saw her in consultation and arrangements for a supply of cortex extract from the research laboratory of Professor Swingle were made. She presented the picture of moderate asthenia and pronounced pigmentation. The bronzing was most intense over the cheeks, chin and neck and to a lesser extent over the shoulders and was present in a milder degree in the perioral and perirectal areas; it was quite marked in the folds between the buttocks. The skin, especially of the back, had a velvety feel and fitted snugly. Over the upper arms and in the axillary zones a number of black freckles were noted. There was slight but definite brownish pigmentation opposite the third molars; no buccal or lingual pigmentation could be determined. The nipple areolas were intensely pigmented, but this the patient stated had always been true. There was no perceptible increase in the vulvar pigmentation.

A slight impairment of resonance was noted over the upper lobes of both lungs posteriorly; there were no rales or friction rubs. The breath sounds were roughened at the apexes and expiration was slightly prolonged. The heart was not enlarged to percussion; the heart sounds were of fair quality, rate and rhythm were normal, no murmurs were audible; the second aortic sound equaled the second pulmonic.

Urinalysis showed occasional white blood cells and a few squamous cells, otherwise being negative. On blood examination the hemoglobin was 68 per cent, red blood cells numbered 3,540,000, white blood cells 7,200, platelets 260,000, polymorphonuclears 52 per cent, lymphocytes 43 per cent and monocytes 5 per cent. Blood chemistry data were urea nitrogen 12 mg., sugar 80 mg., calcium 9 to 13 mg., phosphorus 2.8 mg. and chlorides 580 mg. Blood sodium was 130 milliequivalents per hundred cubic centimeters, blood protein 7.03 Gm. per hundred cubic centimeters and urine chlorides 630 mg. per hundred cubic centimeters.

The patient was placed on the preparation furnished by the Princeton research laboratory. Despite this therapy, at the time of her menses in September 1936 the patient had a minor crisis marked by severe anorexia, vomiting and weight loss of about 15 pounds (7 Kg.). She received intravenous and subcutaneous cortex extract, with 1,200 cc. of saline solution a day. Progynon was given by mouth together with hematinics. The general condition improved throughout the month. Progynon ameliorated the menstrual symptoms.

The patient was admitted to the hospital again on June 9, 1937, with recurrence of severe Addison's crisis, with vomiting and extreme debility. The blood presure was 80 systolic, 60 diastolic. She improved largely as a result of intravenous infusions of 300 cc. of 5 per cent sodium chloride and intramuscular injections of 5 cc. of cortex extract twice daily. The blood pressure on discharge was 120 systolic, 70 diastolic. The patient was ambulatory and the pulmonary tuberculosis inactive. Because of anemia she was given blood transfusions which raised the hemoglobin to 80 per cent.

The patient has spent many summers in Colorado at an altitude of 7,000 feet. She has always been well there except at times during the menstrual period. In three successive summers, exacerbations consisting of mild crises have accompanied the menstrual period. These crises have necessitated the employment of large amounts of cortex extract, as much as from 12 to 15 cc. daily, together with large amounts of salt by mouth and intravenously or subcutaneously. During the last summer

2a. This man is now a patient at the Mount Sinai Hospital, New York City (service of Dr. Wechsler), suffering from attacks of hypoglycemia. Whether they are of pancreatic or adrenal origin is yet to be determined. Because of his euphoric state the patient became very neglectful of treatment, which may have been a crucial factor in precipitating his present difficulties.

the patient elected to stay in New York rather than go to Colorado. Under the influence of the same treatment at sea level she experienced no difficulty at the time of the menses. The patient has remained in unusually good health, occasionally attending dinners, dances and other social functions. Her hormonal requirements have always remained large—in fact the greatest of any case in my experience. She has required 9 cc. of cortex extract daily, together with from 10 to 12 Gm. of salt, taken partly as sodium citrate. Salt is essential to her well-being as is also cortex extract. A letdown in either would probably result in the development of a crisis. Recently the patient has been placed on a triple concentrate of Swingle's preparation, of which 3.5 cc. daily is required.

CASE 5.—A. D., a white man aged 52, had Addison's disease, which had been diagnosed at a hospital in Albuquerque, N. M. I was consulted by letter on May 17, 1937, for suggestions concerning the management of the condition. The patient was first seen on December 31, at which time he was in a remission. There were no complaints other than moderate asthenia, easy exhaustion and mild pigmentation of the skin.

The family history revealed nothing of importance. Past illnesses included the ordinary diseases of childhood, typhoid and rheumatic fever during his youth. At 5 years of age he fell out of a garret and shortly thereafter complained of pain in the right hip and leg. Somewhat later he fell again, further injuring this leg. He was compelled to wear a brace for a time; there was, however, no abscess formation.

The patient is an artist by profession, has traveled extensively and has lived in various art colonies in various countries but now is a resident of Taos, N. M. The present illness began two and one-half years ago. While building a house he noted that he was weak and became easily exhausted. He attempted to fill a commission for some painting but became exceedingly nervous and fearful. He consulted Dr. Sevier of Colorado Springs. After returning to Taos he suffered much from nausea, especially in the morning. He developed a mild attack of what he considered "flu." Later vomiting developed after meals. His local physician felt that he was neurotic and uncooperative but because of the evident weakness and continued vomiting sent him to a hospital in Albuquerque. There they noted the pigmentation, the 30 pounds (14 Kg.) weight loss (weight 130 pounds [59 Kg.]) and diminished blood pressure (80 mm. systolic) and made a diagnosis of Addison's disease. They also recognized that he was dehydrated and gave him intravenous saline solution, dextrose and a solution of epinephrine hydrochloride. I advised against bringing him to Philadelphia because of danger from the heat and the strain of the journey. He was placed on the management of adrenal cortex extract with high salt intake (10 Gm. daily). The improvement was immediate, especially in his appetite. A diet poor in potassium was then attempted, but this he found interfered with his appetite. He eventually found that he was most comfortable on 6 Gm. of salt and a daily injection of 3 cc. of adrenal cortex extract. He became depressed over the persistent asthenia. However, he gradually improved on the treatment outlined, later coming to Philadelphia, at which time he was again in good health. Physical examination Dec. 21, 1937, revealed that he weighed 147 pounds (67 Kg.), was ruddy of complexion and had mild tan. The skin was somewhat darker than normal. There was some slight suggestion of pigmentation of the buccal mucous membranes, the lip margins and the inside of the lower lip. The pupils reacted to light and in accommodation; there was no cervical adenitis; the thyroid gland was normal in size. The lungs were clear on inspection, palpation, percussion and auscultation. The heart was normal in size, shape, position, rate and rhythm. The abdomen was normal; no masses were felt or seen. The gonads were mildly pigmented and there was also slight pigmentation of the buttocks and the legs. A few black freckles were scattered over the shoulders and back. The blood pressure was 100 systolic, 80 diastolic.

The Wassermann reaction was negative; the serum sodium level was 352.5 mg. and serum potassium 14.2 mg. X-ray studies revealed no calcium deposits in the adrenal areas, bony ankylosis of the hip with considerable eburnation of the head of the right femur and irregularity of outline and bony eburnation of the right acetabulum. The kidneys were clearly outlined and normal.

A tentative diagnosis of Addison's disease was made at this time, more on the history and features noted elsewhere than on the conditions found on my examination. The patient was put on the Princeton Laboratory's extract 2 cc. three times weekly, and the salt intake was kept moderately high. He returned home, did a moderate amount of work and felt greatly improved. Occasionally he had gas pains before meals and at times was rather fagged on walking any distance. His strength improved and the weight increased to 156 pounds (71 Kg.).

The patient returned to Philadelphia and was seen again on Jan. 9, 1939. He had had a mild attack of vomiting following too much ice cream, from which he promptly recovered on taking a little sodium bicarbonate. At this time he looked well; he had a good color and firm muscles. There was no pigmentation in the buccal mucous membrane and no black freckles. The weight was 147½ pounds (67 Kg.). The blood serum potassium was reported as 23 mg. and the sodium 260 mg. The blood urea nitrogen was 18.4 mg. per hundred cubic centimeters. The patient regarded himself as quite well. In May he reported that on his own initiative he had reduced his intake of adrenal cortex extract to 1.25 cc. every four days and his daily salt intake to 2 Gm. He felt well and could walk four or five squares. The blood pressure was 100 systolic, 76 diastolic. He visited in the Pocono mountains and on May 31 was taken suddenly ill and brought back to Philadelphia in a rather severe crisis, with extreme weakness and occasional nausea and vomiting. The crisis had come on very suddenly. The systolic blood pressure was 78, the skin pigmentation was quite marked and there was now definite pigmentation of the buccal mucous membrane. He was placed immediately on 5 cc. of the Princeton extract twice daily and given large amounts of salt intravenously and by mouth. Recovery was immediate and after two months the patient returned home to Taos. Since returning he has enjoyed good health and is again back at work. He is now taking 1 cc. of a triple concentrate of the Princeton extract on alternate days and continuing the use of salt.

CASE 6.—S. G., a white woman aged 32 years, married, came in November 1937 complaining of darkening of the skin and lack of strength and ambition. The family history revealed nothing of interest. The past illnesses included measles, mumps and whooping cough in childhood. She had had three surgical operations—an incision of a "cold abscess" in the neck at 5 months of age, the removal of a small tumor from her scalp, and in recent years a tonsillectomy.

Menstruation began at the age of 11, was somewhat irregular, coming at six to seven week intervals, and was not accompanied by pain. The patient has two normal children.

The present illness began in March 1937, immediately after the birth of her second baby. In July the patient began to ache all over and felt as though she were getting the grip. Nausea and severe headache developed and she vomited constantly. She visited her physician and innumerable tests were made of the blood, urine and spinal fluid. The vomiting continued for ten days, during which time she lost 19 pounds (9 Kg.). The blood pressure, however, was said to be normal. The skin became dark and pigmented, changing from a "peaches and cream" type to a dirty brown. Black circles developed under the eyes. She consulted Dr. E. Tuft, of Easton, Pa., who made a diagnosis of Addison's disease.

On physical examination Nov. 23, 1937, the patient was found to be weak, exhausted, emaciated and greatly pigmented. The skin generally was darker than normal. The nipples, labial folds and rectum were almost black. The lips were covered with brown pigmented areas, as were also the buccal mucous membrane, the gums and the inside of the cheeks. The neck and shoulders were peppered with black freckles. The pigmentation was typically addisonian in character. However, the blood pressure was normal, 110 systolic, 80 diastolic. X-ray study of the adrenal area revealed marked calcification on the left and a moderate amount on the right. Urinalysis was negative. The patient was placed on adrenal cortex extract and salt and responded well. At a later date she removed to New York, where she was under the care of Dr. H. David Markman.[3]

3. Colored photographs of this patient by Dr. Markman were placed in the medical exhibit on Addison's disease at the New York World's Fair and are also in Cecil's Textbook of Medicine.

For a short period of time this patient was placed on large doses of vitamin C and glutathione, under which she did fairly well for a period of a few weeks and then began to fail gradually. She was then placed on the Princeton extract, 3 cc. daily, together with a high salt intake, which resulted in definite improvement. She is now taking 1.5 cc. of triple concentrate of adrenal cortex extract daily, together with moderate amounts of salt. She is doing her own housework and is in good general health.

COMMENT

All six of these patients have moderately severe and typical Addison's disease. In four if not five of the cases it is of tuberculous origin and extensive calcification of the adrenal glands was found in three cases. The underlying tuberculosis has remained quiescent during treatment. Special effort, however, has been directed to the management of tuberculosis.

All of these patients, though still pigmented, are ambulatory, comparatively well and active. The business men have continued their business, the artist his painting, the student his college course and the women the care of their homes.

To me, whose experience with Addison's disease has been unusually large, these results represent the best I have seen to date. In years gone by the care of patients with Addison's disease was fraught with constant anxiety. Formerly patients were more or less continuously in a crisis, while now they are active, ambulatory, in moderately good health and going about attending to their daily business. In this series of patients crises have been prevented to a large extent and the control of hormonal deficiency has been effective. No toxic effects from treatment have been noted at any time in any of these patients, and local irritation has been entirely lacking. With the regimen outlined the disease has been greatly ameliorated; remissions have been prolonged, complications rare and crises decreased in frequency and severity; rehabilitation has been striking and the survival time markedly increased. The last six consecutive patients on this regimen have averaged almost seven years of survival and nearly five years under this form of treatment with no deaths. From these results it is evident that true progress has been made in the treatment of Addison's disease.

Thirty-Fourth and Pine streets.

Poisoning by Food in 1938 Claims 606.—A report on "Fatal Accidents in the United States," just issued by the U. S. Bureau of the Census, shows that in 1938, latest year for which statistics are available, there were 606 deaths from food poisoning in the United States. This figure compares with 665 in 1937 and is the lowest toll of any year in the 1933-1938 period covered. Food poisoning ranked thirteenth among accidental causes of death and accounted for 0.6 per cent of all accident deaths. In terms of the estimated population for 1938, food poisoning killed one out of every 200,000 persons. Children under 1 year of age suffered most from food poisoning, with fifty-eight deaths in this age group, or 9.6 per cent of the total. Once infancy was past, the greatest number of fatalities from food poisoning occurred in the 45-49 and 50-54 year old classes, with forty deaths in each, or 6.6 per cent of the total. Geographically, food poisonings were most common in the Southern states. Of the 606 deaths from this cause, ninety-three occurred in Texas, thirty-five in Georgia, thirty-one in Florida, thirty-one in Alabama, twenty-eight in North Carolina, twenty-eight in Oklahoma, twenty-five in Kentucky, twenty-three in Tennessee, twenty-one in Louisiana, twenty-one in Mississippi and twenty in Missouri. Cities of 100,000 or more population reported only ninety of the 606 deaths from this cause, or 14.9 per cent of the total, although according to the 1930 census 29.6 per cent of the population lived in such places.

THE USE OF DESOXYCORTICOSTERONE ACETATE IN ADDISON'S DISEASE

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Desoxycorticosterone acetate is one of several synthetic adrenal cortical hormones. It was produced by Steiger and Reichstein [1] and announced in 1937. More recently, its existence in beef adrenals has been shown by Reichstein and von Euw.[2] Reports dealing with the clinical use of this material have been published by Levy-Simpson,[3] Levy-Simpson, Wilkinson, Himsworth and Jones,[4] Cleghorn, Fowler and Wenzel,[5] Thorn, Howard and Emerson [6] and Zahler and Litzka.[7] Corticosterone is apparently identical with Kendall's [8] substance B.

We have treated six cases of Addison's disease with this material for periods ranging from six to ten months. Except for brief periods of observation, such treatment has been combined with the use of sodium chloride as enteric coated tablets, in doses varying from 3 to 16 Gm. per day.[9] At first potassium intake was limited in all cases,[10] but more recently strict dietary restrictions have not been continued. Prior to the use of desoxycorticosterone, treatment in every instance had included low potassium diet calculated to contain approximately 1.6 Gm. per day, and extra sodium chloride, and in four cases extract of adrenal cortex in the form of eschatin.[11] The amount of improvement on this management varied strikingly from questionable benefit in case 6, probably the result of inadequate therapy, to marked symptomatic relief in cases 1 and 2.

SYMPTOMATOLOGY

In all patients, distinct symptomatic improvement was noted when desoxycorticosterone acetate was added to the treatment they were already receiving.

Two of the patients have been rendered entirely symptom free.

CASE 1.—A man aged 30 had calcified deposits in both adrenals and had recovered from severe crises in September

From the Cleveland Clinic.

The desoxycorticosterone acetate (cortate) used in the treatment of the cases reported here was supplied by the Schering Corporation through Dr. Irwin Schwenk and Dr. Max Gilbert. This product has not been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

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2. Reichstein, T., and von Euw, J.: Ueber Bestandteile der Nebennierenrinde Isolierung der Substanzen Z (Desoxy-Corticosteron) und R sowie wieterer Stoffe, Helvet. chim. acta **21:** 1197, 1938.
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9. Loeb, R. F.: Effect of Sodium Chloride in Treatment of Patient with Addison's Disease, Proc. Soc. Exper. Biol. & Med. **30:** 808-812 (March) 1933.
10. Wilder, R. N.; Kendall, E. C.; Snell, A. M.; Kepler, E. J.; Rynearson, E. H., and Adams, Mildred: Intake of Potassium, Important Considerations in Addison's Disease; a Metabolic Study, Arch. Int. Med. **50:** 367-395 (March) 1937.
11. Eschatin is adrenal cortex extract produced by Parke, Davis & Co. Through them and Dr. E. A. Sharpe sufficient material has been supplied to carry on these studies. This product has not been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

and October 1938. Between November 1938 and March 1939 his treatment consisted of a low potassium diet (1.6 Gm. per day), 10 to 12 Gm. of sodium chloride daily, and extract of adrenal cortex in doses varying from 7 cc. daily to 2 cc. every second day. In March his strength was good but not entirely normal, and other symptoms were minimal. At that time, extract of adrenal cortex was gradually withdrawn and intramuscular injections of desoxycorticosterone acetate were begun in doses of 10 mg. per day, reduced after ten days to 10 mg. on alternate days. This was changed to 7.5 mg. daily in April and 5 mg. daily in July. Sodium chloride was continued in the same dose, and dietary restrictions were gradually eliminated. The increase in his strength was continuous and in September he considered it to be as good as it had ever been. Exercise had been increased until he walked from 7 to 10 miles a day with little or no fatigue.

CASE 2.—A youth of 18 years was first seen in August 1938, with extreme weakness, nausea, deep brown pigmentation of the skin and characteristic pigmentation of the buccal mucosa. Between that time and April 1939 treatment consisted of a low potassium diet, 3 to 12 Gm. of added sodium chloride daily and adrenal cortex extract in doses varying from 5 cc. daily to 2 cc. every second day. On this management, the weight increased approximately 12 pounds (5 Kg.) and strength was much improved, though not normal. Intramuscular administration of desoxycorticosterone acetate in doses of 10 mg. per day

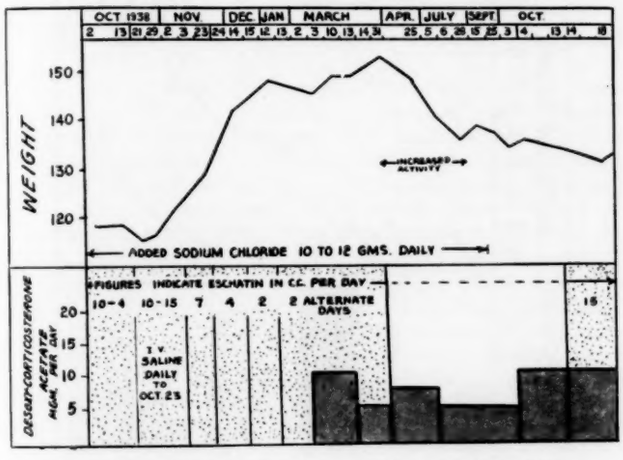

Chart 1 (case 1).—Effect of desoxycorticosterone on weight.

was begun on April 18, 1939. The dose was gradually diminished in July to 5 mg. daily, and this was continued subsequently. The same dose of salt was continued. Adrenal cortex extract was withdrawn after initiation of desoxycorticosterone therapy, and by June the diet was no longer restricted. Within two weeks of the time desoxycorticosterone injections were begun, general improvement was occurring at an obviously more rapid rate than it had before. Since May he has been entirely symptom free. He is able to walk long distances and appears always to have an abundance of energy and a constantly cheerful outlook.

The third and fourth patients improved strikingly while receiving desoxycorticosterone acetate. Although their strength approximated normal, they were never entirely symptom free. Nausea, vomiting and diarrhea were readily controlled, but gaseous dyspepsia and muscular aching remained in both.

CASE 3.—A man aged 38 had symptoms consistent with Addison's disease. He had definite hyperpigmentation of the buccal mucosa, and results of the sodium and chloride excretion test [12] were typical of adrenal cortical deficiency. Desoxycorticosterone acetate injections, in doses of 5 mg. daily, were begun on Jan. 20, 1939. He received in addition a low postassium diet and 5 Gm. of added sodium chloride daily. Adrenal cortex extract was given in doses of 5 cc. and 4 cc. daily for periods shown in the charts. The dose of desoxycorticosterone varied; it was from 5 to 10 mg. per day from March 12 until May 5, up to which time improvement had been very meager. During the subsequent period the diet was gradually liberalized, adrenal

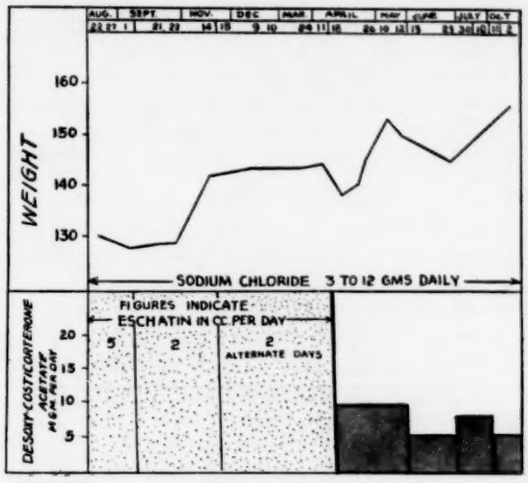

Chart 2 (case 2).—Effect of desoxycorticosterone on weight.

cortex extract was not given, and the intake of added sodium chloride remained at 5 Gm. per day. For three weeks in May, doses of from 15 to 20 mg. daily were given. It was then that he showed distinct improvement in strength, nervous stability and general sense of well-being. Doses of 10 mg. or more per day have been continued, and improvement has been maintained. Arterial tension gradually increased, and since June the blood pressure has been found in hypertensive levels on practically all observations, reaching as high as 194 systolic, 110 diastolic. It has been a striking clinical fact that in spite of this he has not been entirely symptom free. The addition, to this program, of adrenal cortex extract in doses of 10 cc. per day for fifteen days was accompanied by the disappearance of practically all his remaining symptoms. Subsequent withdrawal of adrenal cortex therapy for a month was followed by a recurrence of muscular aching, mild fatigue and abdominal distress. Later the addition of adrenal cortex extract in the same dose for twenty-five days resulted in distinct clinical improvement.

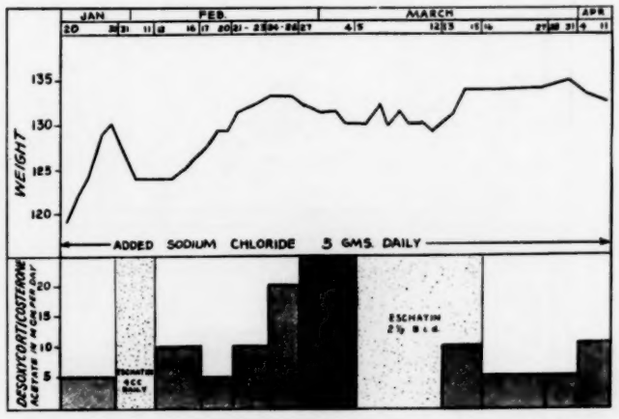

Chart 3 (case 3).—Effect of desoxycorticosterone on weight.

CASE 4.—A woman aged 57 had the symptoms and appearance of Addison's disease. She had hyperpigmentation and sodium and chloride excretion under test conditions consistent with the diagnosis. While she was receiving a low potassium diet, 12 Gm. of added sodium chloride per day and a dose of adrenal cortex extract approximating 3 cc. daily, there was gradual improvement over a period of four months. March 6, 1939, the dose of adrenal cortex extract was maintained at 2 cc.

12. Cutler, H. H.; Power, M. H., and Wilder, R. M.: Concentrations of Sodium Chloride and Potassium in Blood Plasma and Urine of Patients with Addison's Disease: Their Diagnostic Significance, Proc. Staff Meet., Mayo Clin. **13**: 244-249 (April 20) 1938.

every other day and desoxycorticosterone was begun. Except for a few days, the dose did not exceed 5 mg. per day for two months. During this time improvement was more rapid. Meanwhile the blood pressure, which had never previously exceeded 142/78, had risen to 176/106. On May 6 adrenal cortex extract was withdrawn from the program, salt was continued, and desoxycorticosterone was increased to 15 mg. per day, which

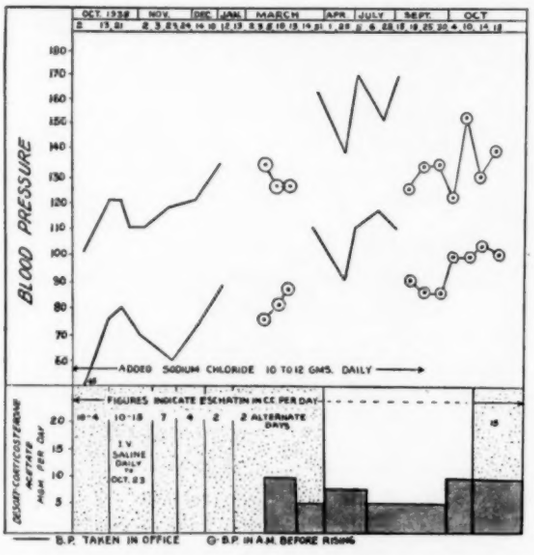

Chart 4 (case 1).—Effect of desoxycorticosterone on blood pressure.

was followed by more rapid improvement. During the two weeks this treatment was continued, pitting edema of the ankles was present and blood pressure reached 188/110. For the next two months the dose of desoxycorticosterone varied from 5 to 10 mg. per day. Clinical improvement was maintained. Blood pressure remained at approximately 185/110. Generalized aching pain and abdominal distress were not entirely relieved.

For a month no medication was given except 12 Gm. of sodium chloride daily, and a qualitatively low potassium diet

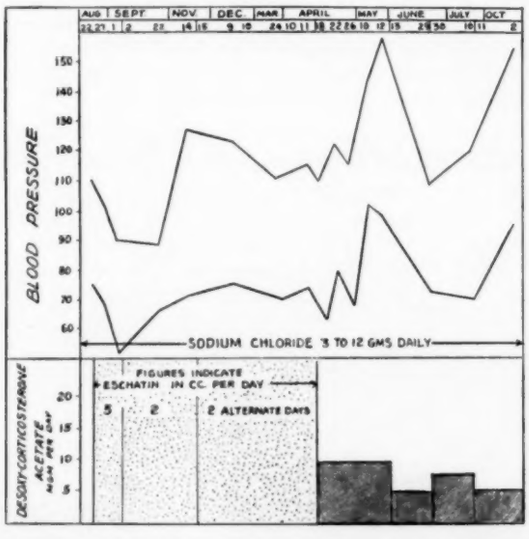

Chart 5 (case 2).—Effect of desoxycorticosterone on blood pressure.

was followed. Within a few days the patient was weaker, and blood pressure had fallen to 150/96. In two weeks some vomiting had occurred, and by the end of a month she spent most of her time in bed, generalized aching increased, and she looked definitely ill. Blood pressure was still maintained at 145/90. In short, distinct evidence of acute adrenal insufficiency was present, in spite of the fact that blood pressure, which had been hypertensive during desoxycorticosterone therapy, had not fallen below the upper range of normal. Prior to any treatment it had been approximately 100/70.

Desoxycorticosterone injections in doses of 10 mg. every second day were resumed for a period of six weeks, and a low potassium diet was continued. During this time adrenal cortex extract was given in doses of 10 cc. daily. At the end of six weeks the blood pressure averaged approximately 160/100. The patient was judged to be in better clinical condition than she had been at any time previously, in spite of the fact that she had received no sodium chloride during the last two weeks of this interval.

The fifth and sixth patients have also shown distinct improvement through the use of desoxycorticosterone. Their improvement has been less striking than in the other cases, owing in one instance to less constancy of therapy and in the other to inadequacy of therapy.

CASE 5.—A 35 year old woman had symptoms of Addison's disease, and the adrenal glands were partially calcified. Sodium and chloride excretion tests corroborated the diagnosis.

At the beginning of treatment, Dec. 12, 1938, she was bedridden, weak and drowsy. Desoxycorticosterone was given in doses of 10 mg., 10 mg. and 15 mg. respectively on each of the

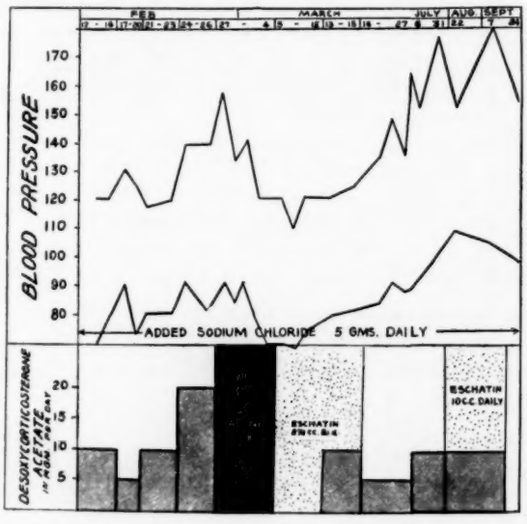

Chart 6 (case 3).—Effect of desoxycorticosterone on blood pressure.

first three days, during which time she was apparently on the verge of crisis. Five mg. was given on the next day, and treatment was withdrawn for three days. On the fourth day after initiation of treatment, she showed distinct clinical improvement and was bright, talkative and in good spirits. For three days 15 mg. per day was then given, after which 10 mg. daily was continued until nineteen days from the beginning of treatment. Added sodium chloride, 8 Gm. per day, and a low potassium diet were used. General improvement continued until the sixteenth day, and in the next three days massive edema appeared, with a total gain of 14 pounds (6 Kg.) in body weight over a six day period, which was not associated with arterial hypertension, the blood pressure at the height of the edema being 112/70.

From that time until May the patient was not under our supervision. She followed a low potassium diet and took additional sodium chloride and small doses of adrenal cortex extract with little or no improvement. Beginning May 16, she received 10 mg. of desoxycorticosterone daily for a month, continuing other measures as before but without adrenal cortex extract. The clinical progress during this period was complicated by the presence of hematuria, pyuria and an acute infection of the upper respiratory tract. Although the blood pressure and weight were indicative of improvement, there was little or no change clinically.

From that date until October, treatment was inadequate and no further progress was made. October 3, following a period

of withdrawal of extra sodium chloride, 400 mg. of desoxycorticosterone was implanted subcutaneously. According to Thorn and his co-workers this would supply to the patient 2 mg. of the substance daily. For three weeks following this time, without the aid of added sodium chloride, there was no clinical improvement. After this time, clinical improvement did occur when 15 cc. per day of adrenal cortex extract was added to the therapy. This point will be discussed further.

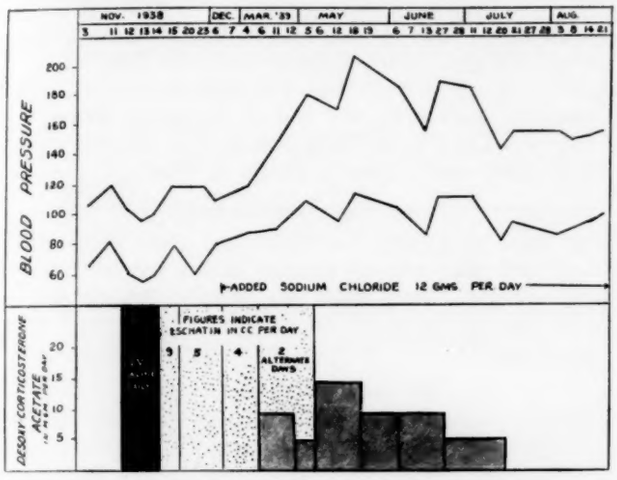

Chart 7 (case 4).—Effect of desoxycorticosterone on blood pressure.

CASE 6.—A man of 52 years had a diagnosis of Addison's disease on the basis of typical symptoms; he was without pigmentation or adrenal calcification, but results of the sodium and chloride excretion test were consistent with Addison's disease.

From August 1938 to March 1939 he followed a low potassium diet; he took from 12 to 16 Gm. of sodium chloride daily and approximately 5 cc. of adrenal cortex extract every other day. There was apparently no improvemnt on this program.

He received 20 mg. of desoxycorticosterone daily from March 16 to 19, 10 mg. on March 22 and, except for a brief interval, has taken 5 mg. daily since. Benefit has been distinct but very gradual. He is able to be up and to walk out doors but is unable to work and has constant symptoms; blood pressure has risen from 124/86 before treatment to 164/90 recently.

WEIGHT

All the patients reported gain in weight after beginning the use of desoxycorticosterone (charts 1, 2 and 3). In general the greatest clinical improvement has been seen in those patients who have gained the most weight. Patients 1 and 2 showed total weight gains of 33 and 28 pounds (15 and 13 Kg.) respectively. In both instances much of the weight had been gained before desoxycorticosterone was used. In case 1, diet, adrenal cortex extract and salt caused a weight gain of 25 pounds (11 Kg.) and in case 2, 16 pounds (7 Kg.). In case 1 the addition of desoxycorticosterone to the treatment in doses of 10 mg. per day was followed by an additional gain of 4 pounds (2 Kg.) in a week and a total of 8 pounds (4 Kg.) in four weeks. Subsequently, there was a fall in weight as the dose of desoxycorticosterone was reduced and the amount of exercise increased.

In case 2 the weight had increased considerably on diet, added sodium chloride and adrenal cortex extract. Following the withdrawal of adrenal cortex extract and substitution of desoxycorticosterone, there was a further increase.

In case 3 the use of 5 mg. per day caused a prompt gain of 11 pounds (5 Kg.) in weight in eleven days. There was a distinct weight loss following withdrawal of therapy on two occasions and a gain on its resumption. Patient 4 had gained 10 pounds (4.5 Kg.) in weight before desoxycorticosterone was given, and in this instance there was an additional gain of only 3 pounds (1.3 Kg.) during the time the drug was continued and a loss of 3 pounds when it was withheld.

The rapid weight gain with edema in case 5 is dealt with separately later. In case 6 only about 5 pounds (2.3 Kg.) was gained over a period of months with doses of desoxycorticosterone of 5 mg. per day.

PIGMENTATION, PULSE RATE AND TEMPERATURE

No changes in pigmentation have been noted as a result of treatment except those that could be accounted for on a basis of changes in nutrition or hydration. No significant changes in pulse rate or temperature have been observed.

BLOOD PRESSURE

Desoxycorticosterone has a remarkable tendency to cause an elevation of blood pressure (charts 4, 5, 6, 7). This is particularly apparent when it is injected in doses of 10 mg. per day or more in conjunction with the ingestion of a relatively large amount of sodium chloride and especially when it is continued over a period of weeks or months. Some degree of elevation of systolic and diastolic pressure has been observed in every case and this increase has reached hypertensive levels in five. The power of this drug to cause arterial hypertension is out of proportion to its efficiency in controlling muscular strength and dispelling gastrointestinal unrest. Our judgment that this is the case is not based on observations of a few weeks but on those extending over many months, and in the presence of moderately good general nutrition. Patients 3 and 4 are particularly interesting in this respect. As will be seen in charts 6 and 7, they show higher blood pressure levels than were found in patients 1 and 2, yet the first two were symptom free and the second two, while improved as stated, still complained continuously of weakness, muscular aching and gastrointestinal unrest.

In case 4, the blood pressure levels are of particular interest. Before treatment, the systolic pressure was usually in the neighborhood of 100 and the diastolic 60. During the time the patient showed considerable clinical improvement while on a special diet, adrenal cortex extract and salt therapy, the pressure did not exceed

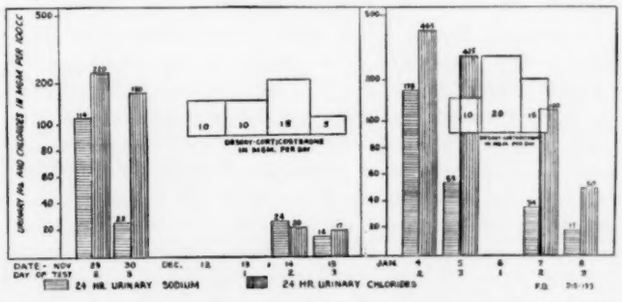

Chart 8.—Effect of desoxycorticosterone on urinary sodium and chloride.

120/84. After she had taken desoxycorticosterone for two months, the blood pressure went to approximately 212/115 in the office. From July 21 to August 22 she received no desoxycorticosterone, and during this time distinct weakness developed and she finally was in bed most of the time with nausea and some vomiting. Meanwhile the blood pressure fell gradually but in the face of distinct deficiency symptoms still approximated 145/85.

The mechanism by which the elevation of blood pressure levels is brought about in these instances is not clear. It must be caused at least in part by factors

other than water retention. The most obvious reason for believing this is that the individuals with the most hypertension (patients 3 and 4) did not gain the most weight. Others (patients 1 and 2), who had less hypertension, gained more weight. In addition, the rapid water retention, to the point of massive edema in one case, was not associated with hypertension. It is also significant that the plasma volume and hematocrit levels

TABLE 1.—*Levels of Sodium, Potassium and Chloride in the Blood*

	Sodium	Potassium	Chloride
Case 1			
September 27	278	18.3	423
October 1	326	....	528
October 11	343	24.9	...
October 25	337	20.7	...
November 23	346	18.9	...
March 2	347	17.4	...
July 28	346	14.9	..
September 21	358	17.1	544
October 3	360	18.1	577
Case 3			
September 4	350	18.9	495
January 7	357	22.9	511
January 24	363	16.9	528
February 22	365	16.7	...
March 3	344	19.2	...
May 18	423	19.7	561
August 18	362	15.5	...
August 24	368	18.7	...
Case 4			
November 9	334	16.7	511
May 19	442	10.1	528
July 15	360	16.1	...
July 28	343	16.0	...
August 9	370	21.0	...
August 24	353	24.0	...

reach normal promptly within a few days after the start of desoxycorticosterone therapy. Subsequent estimations of these values failed to show any continued consistent change while the blood pressure was rising through upper normal levels into hypertensive range over a period of weeks. In one case added sodium chloride was withdrawn from the treatment. The patient continued to use 10 mg. per day of desoxycorticosterone together with 10 cc. daily of adrenal cortex extract. At the end of a month the blood pressure remained 170/110, almost exactly what it had been before withdrawal of extra sodium chloride.

PLASMA SODIUM, CHLORIDES AND POTASSIUM

In general, the levels of sodium, potassium and chlorides in the blood are poor guides to the condition of a patient with Addison's disease. Some patients may be very ill and apparently at the point of crisis and yet maintain normal levels of these electrolytes in the plasma. In the course of treatment, the levels of sodium and chloride show enough variation to be difficult of correlation with minor changes in the clinical status. The potassium levels are the least dependable, owing perhaps in part to difficulties arising from the technic of estimation. Scattered reports throughout the course of treatment are shown in table 1 for three of the cases.

In case 1, the first estimations were made when the patient was in crisis. The rapid shift of sodium and chloride levels to normal followed the use of large amounts of adrenal cortex extract and intravenous saline solution. The remaining figures can be correlated with treatment shown in the preceding charts. The last figures were obtained after seven days of salt withdrawal and show no deviation from normal. In case 3, the trend toward higher levels of sodium and chlorides during treatment and their maintenance during desoxycorticosterone therapy is indicated. In case 4, the last values shown followed withdrawal of desoxycorticosterone therapy but continued use of 12 Gm. of sodium chloride per day from July 21. Here the high plasma potassium levels are probably significant.

The power of desoxycorticosterone to cause a reversion of negative chloride and sodium balance toward the positive side is shown by comparing the results of excretion of these substances during a sodium and chloride excretion test before and after treatment. Two such cases have been reported before.[13] The test is that described by Cutler, Power and Wilder.[12] Both patients had clinical Addison's disease, and the tests showed high levels of sodium and chloride excretion before treatment. Following the use of desoxycorticosterone in the doses indicated, there was a very marked retention of these electrolytes as shown in chart 8.

DEXTROSE TOLERANCE

In two cases, dextrose tolerance tests were done before and after several months of the use of desoxycorticosterone. They show no definite change, which we feel can be interpreted as significant. The tests were done using 100 Gm. of dextrose orally (table 2).

HEMOCONCENTRATION

The importance of hemoconcentration and dilution as a means of determining the status of a particular case of Addison's disease has been emphasized by Thorn and his co-workers.[6] We have found that desoxycorticosterone has remarkable power to shift the hemoconcentration, which is readily measured by hematocrit readings and red cell counts (charts 9, 10 and 11). A marked shift in hemoconcentration can occur without a parallel improvement in symptoms. Determinations of plasma volume[15] in our cases have not been numerous, but results are presented for cases 1 and 5, in which a sufficient number have been done to be comparable. These have not demonstrated such a striking shift as hematocrit levels and are less practical for clinical use. The effect of this drug on hemoconcentration is unmistakable. When comparing measurements of this factor in Addison's disease it is well to remember that it is influenced greatly by the intake of fluid and electrolytes and comparisons may not be entirely valid unless these factors are well controlled, which is not always practicable over a long period of management.

TABLE 2.—*Dextrose Tolerance Before and After Treatment* *

	Date	Fasting	½ Hr.	1 Hr.	2 Hrs.	3 Hrs.	4 Hrs.
Case 2	August 1938	82	125	100	..	85	85
	Desoxycorticosterone acetate therapy begun April 1939						
	July 1939	76	129	116	82	82	80
	October 1939	79	111	132	77	65	65
Case 6	August 1938	101	165	238	201	100	45
	Desoxycorticosterone acetate therapy begun March 1939						
	July 1939	103	187	224	143	133	90

* The values indicate milligrams per hundred cubic centimeters.

In the first patient, following low hematocrit readings during a period of intensive therapy for crisis, there was a distinct rise, indicative of hemoconcentration, while the patient was receiving added sodium chloride,

13. McCullagh, E. P.: Sodium and Chloride Retention in Addison's Disease Treated with Desoxycorticosterone Acetate, Cleveland Clin. Quart. **6**: 105-108 (April) 1939.

14. Footnote deleted on proof.

15. Plasma volume measurements in our cases were done by a modification of the method of N. M. Keith, L. G. Rowntree, and J. T. Geraghty (A Method for the Determination of Plasma and Blood Volume, Arch. Int. Med. **16**: 547-576 [Oct.] 1915).

a low potassium diet and adrenal cortex extract in the doses indicated. With initiation of desoxycorticosterone in doses of 10 mg. daily, the hematocrit levels fell sharply over a period of ten days, to rise subsequently when the quantity was reduced to 7.5 mg. and later 5 mg. per day. A moderate fall was noted when the dose was increased to 10 mg. daily and continued transiently when 15 cc. of adrenal cortex extract daily was

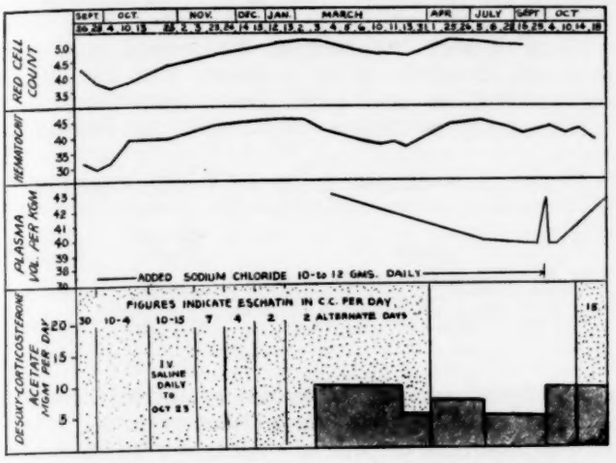

Chart 9 (case 1).—Effect of desoxycorticosterone on hemoconcentration.

added to the program. Plasma volume per kilogram is roughly parallel. Red cell counts parallel the hematocrit levels.

Case 3 illustrates satisfactorily the parallel between blood dilution and desoxycorticosterone dosage as contrasted to the relative concentration while saline solution or adrenal cortex extract in small doses was used.

Hemoconcentration studies in case 5 are interesting just prior to and after desoxycorticosterone implantation. Added sodium chloride was withdrawn September 25. The daily sodium chloride intake subsequently was calculated carefully but was not limited during the time represented in the chart. The daily fluid intake was constant throughout. Following the implantation of 400 mg. of crystalline desoxycorticosterone October 3, there has been a distinct fall in hematocrit levels, following a brief initial rise, which may have resulted from sodium chloride withdrawal on September 25. As mentioned, clinical improvement did not parallel this change.

EVIDENCES OF OVERDOSAGE AND UNTOWARD EFFECTS

To date, we have observed three untoward symptoms resulting from the use of desoxycorticosterone: edema, arterial hypertension, and fluid in the knee joints. Although the first two of these we consider distinct evidences of overdosage, the last is not definitely so.

In several cases a mild but definite pretibial edema was noted during treatment. This did not tend to increase over several months of continued therapy.

The production and maintenance of a hypertension of the proportions described in several cases (charts 4, 5, 6 and 7) constitutes, in our opinion, a definite evidence of overdosage.

It is interesting that the blood pressure did not rise to hypertensive levels in less than a few weeks or months of treatment and that it was not associated with obvious edema. The doses of desoxycorticosterone with which hypertension occurred are shown in the charts. It has been noted repeatedly that there may be a rather impressive tendency for the blood pressure to rise to hypertensive levels during the day in these cases, even though it may not exceed normal when determined in the morning before the patient rises. In one of the cases reported by Levy-Simpson [3] there was a mild arterial hypertension, with blood pressure of 160/90.

Patient 2, contrary to instructions, had been giving his injections repeatedly at the same site in the lower anterior part of the thigh bilaterally. During September he fell and injured his right knee. No change was noted until a week later, at which time there was distinct swelling of the left knee joint and subsequently similar almost painless swelling of the right knee. Examination showed distinct intracapsular fluid. The part played by the indurated areas above the knees due to improper use of injections could not be well evaluated but it was thought to be a factor.

Jones [4] reports the occurrence of recurrent bouts of fever following repeated attempts to use desoxycorticosterone in oil. The injection of the oil alone did not cause the fever. We have not observed this.

Massive edema occurred in one case. Patient 5 (chart 12) received a total of 175 mg. of desoxycorticosterone between Dec. 12 and Dec. 31, 1938. She had been severely ill, apparently on the verge of crisis, at onset, and had improved markedly after four days of treatment. A low potassium diet and 8 Gm. of added sodium chloride daily were adjuncts to the program. December 24, twelve days after the first dose, she weighed 124 pounds (56.2 Kg.). Four days later edema of the hands appeared, and on the following day the entire body was involved, the face being greatly swollen. Associated symptoms were aching of the joints and limbs, anorexia, substernal pain and severe headache. Treatment was withdrawn December 31, at which time she weighed 138 pounds (62.6 Kg.), a gain of 14 pounds (6.4 Kg.) in six days. Swelling had subsided visibly by January 2 and on January 4 was almost gone. On January 7 she weighed 131 pounds (59.4 Kg.). At the height of the edema the blood pressure was 112/70. Microscopic blood and a few casts were reported as

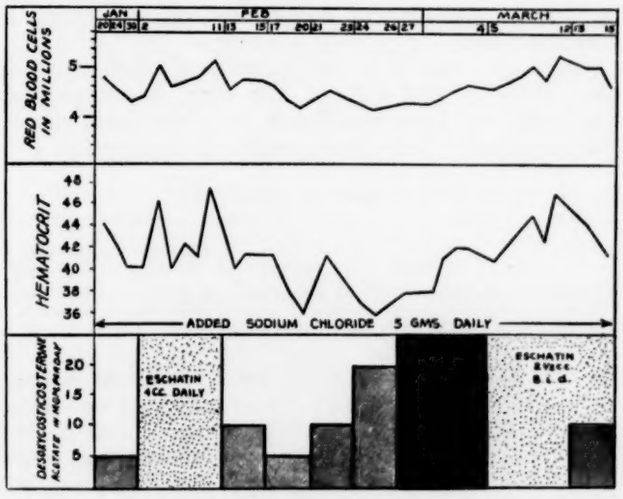

Chart 10 (case 3).—Effect of desoxycorticosterone on hemoconcentration.

occurring in the urine at that time. She had had pyuria and hematuria previously. Subsequently blood urea levels and urea clearance tests were found to be normal.

The fact that this episode occurred at a menstrual period may be significant in view of the fact that she had had previous premenstrual edema, although before it amounted to only 3 or 4 pounds, never approaching the severe proportions just described.

DESOXYCORTICOSTERONE IMPLANTATION

Only one patient (patient 5) has been observed after implantation of desoxycorticosterone.

Prior to Sept. 26, 1939, this patient was taking 2 cc. of adrenal cortext extract and 8 Gm. of sodium chloride per day in addition to a low potassium diet. The extra salt was discontinued on this date but the diet, which contained less than 1.6 Gm. of potassium daily, and the

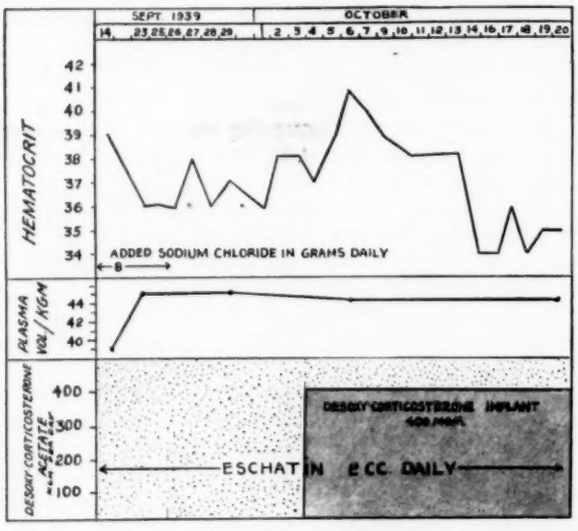

Chart 11 (case 5).—Effect of desoxycorticosterone on hemoconcentration.

cortical extract were continued. October 3, 400 mg. of desoxycorticosterone was implanted subcutaneously (in two tablets) in the subaxillary area. Adrenal cortex extract was then discontinued. She took voluntarily a maximum of 8 Gm. of sodium chloride in addition to the diet, but no enteric coated salt tablets were given. After October 18, the total sodium chloride intake in addition to that contained in food was limited to 3 Gm. per day. The daily fluid intake was kept constant.

Twenty days after the implantation the patient was very weak and drowsy and fainted on attempting to leave her bed.

Over approximately two months of observation in this instance, 400 mg. of the drug subcutaneously implanted has been insufficient to bring about clinical improvement. After three weeks of observation with

TABLE 3.—*Balance in Case 5*

Period	Chloride Intake	Urinary Excretion
Six days before implantation of pellets.....	25.68 Gm.	22.02 Gm.
Six days following.....	45.68 Gm.	20.58 Gm.

no clinical improvement under these conditions, adrenal cortex extract in doses of 7.5 cc. twice daily was added to the treatment. The following day strength had improved. Within three days there was a pronounced and obvious change in the general condition; strength had increased markedly and aching pains and gastrointestinal symptoms had been almost abolished. This patient had been very much better while receiving larger quantities of salt with small doses of adrenal cortex extract than when she was on small amounts of salt with an implantation of 400 mg. of desoxycorticosterone. This emphasizes the great value of large amounts of sodium chloride in such cases and is a warning against too hasty judgment as to the value of any therapy when large doses of salt are being used.

DOES DESOXYCORTICOSTERONE ACETATE REPRESENT COMPLETE REPLACEMENT THERAPY?

It has been suggested on clinical grounds by Levy-Simpson and Himsworth [4] that desoxycorticosterone may not represent complete replacement therapy. Some of our clinical observations bear definitely on this point.

There seems little room for doubt that such hypertension as was maintained in cases 3 and 4 (charts 6 and 7) was the result of the drug given and that this represented an overdosage phenomenon. After maintenance of such hypertension for several months, it appeared reasonable to us to assume that the patients had received as much improvement from the desoxycorticosterone as they would be likely to receive. In

TABLE 4.—*Chloride Intake and Urinary Output*

Period	Chloride Intake	Urinary Excretion
Four days before treatment with adrenal cortex extract	12.22 Gm.	13.56 Gm.
Four days during administration of 15 cc. per day of adrenal cortex extract.....	11.88 Gm.	12.51 Gm.

spite of this, symptoms ascribed to adrenal deficiency had not been alleviated. The addition of cortical extract to the treatment in both of these cases led to decided and prompt clinical improvement. This appears to indicate that another substance or substances necessary to normal physiology have been supplied by the extract which were not supplied by the synthetic hormone.

In case 4 (chart 7), desoxycorticosterone was withdrawn for a month, at the end of which time the patient appeared to be on the verge of crisis. The blood pressure, which had been in the range of hypertension during treatment, was still in the upper range of normal, a change which did not appear to parallel the other evidences of deficiency, especially in consideration of the fact that the blood pressure in this case was approximately 100/60 before treatment was begun. In short, it appeared in this instance that we were dealing with relatively severe adrenal insufficiency, while at the same moment evidence of one phase of desoxycorticosterone

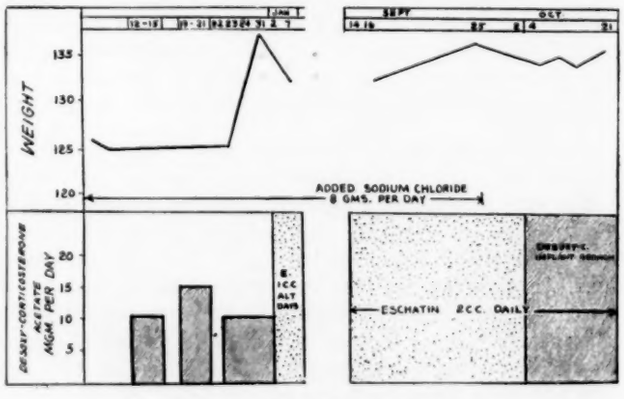

Chart 12 (case 5).—Effect of overdosage.

overdosage was present. This too suggests that desoxycorticosterone deficiency is not the only factor of importance producing symptoms of Addison's disease. It has appeared to us also that there is a discrepancy between the power of desoxycorticosterone to cause hemodilution and its power to control symptoms. This point is well illustrated in case 5 (chart 11), where it is seen that there was a distinct hemodilution following implantation of the drug, but during a three week inter-

val no improvement in symptoms occurred. If this was complete replacement, we believe that improvement in symptoms should parallel hemodilution more closely.

In case 5, chloride balance studies were done which have a bearing on this point also. During a period of six days before and after implantation of desoxycorticosterone, the chloride content of the diet was calculated by careful weighing of the food. Analysis of actual samples was not done. The patient was given no added salt other than that which she took voluntarily, and this was calculated by weighing the salt offered her before and after meals. She had been receiving 2 cc. of adrenal cortex extract daily for some time and this was continued. The fluid intake was constant. Following implantation of 400 mg. of desoxycorticosterone as pellets, a marked chloride retention occurred. This was unassociated with symptomatic improvement. The balance during these two six day periods is shown in table 3.

Subsequently, added sodium chloride was limited to 3 Gm. daily, which was accurately weighed. Other measures were continued as before. For four days before and for four days after increasing the dose of adrenal cortex extract chloride intake and output were carefully calculated as shown. On both occasions there tended to be a slightly negative balance, due perhaps in part to the fact that the intake was low. The most striking fact was that after addition of adrenal cortex extract there was a prompt and obvious clinical improvement but without any further shift in chloride balance. Total chloride intake and urinary output in these two four day periods, beginning sixteen days after implantation of pellets, were as shown in table 4.

In short, in this case desoxycorticosterone causing marked chloride retention influenced the symptoms little if at all, while the sodium chloride intake was low. Added cortical extract, however, causing no distinct shift in chloride balance, did bring about marked clinical improvement. This we interpret as further indication that something more than desoxycorticosterone was added to the treatment when cortical extract was given. Similar observations on chloride balance under well controlled conditions over periods of five days before and after adrenal cortex therapy corroborate this opinion.

SUMMARY

Six patients with Addison's disease have been treated with desoxycorticosterone acetate for periods ranging from six to ten months.

Clinical benefit has followed the use of this substance in all cases. In two cases the use of the drug together with added sodium chloride and some restriction of potassium intake has resulted in complete symptomatic control. In two cases the symptoms have been much lessened but not completely alleviated, and in two cases, with less consistent or possibly inadequate treatment, though improvement occurred, the results were only moderately good. In conjunction with other treatment, doses as large as 10 mg. per day or more were necessary before distinct initial improvement was obvious.

In all cases weight gain occurred and the blood pressure rose. Blood pressure reached levels of hypertension in five cases.

Low values for plasma sodium and chlorides tend to rise, while a high plasma potassium value tends to fall, with desoxycorticosterone administration. These values are not always consistent with the clinical condition of the patient.

Desoxycorticosterone causes the negative sodium and chloride balance of Addison's disease to revert to normal and corrects hemoconcentration.

No change in pulse, temperature, pigmentation or dextrose tolerance has been observed as a result of this hormone.

Arterial hypertension and massive edema may appear as evidences of overdosage. Hydrops of the knee joints, which occurred in one case, was complicated by local induration above the knee due to improper injections and may not represent an overdosage phenomenon.

Evidence is presented which indicates that desoxycorticosterone does not yield complete adrenal cortical replacement. In view of this, we feel that for the present, at least, it is in the best interest of the patient not to depend on desoxycorticosterone as therapy in Addison's disease to the exclusion of adrenal cortex extract in the presence of crisis or if some symptoms remain uncontrolled.

Euclid Avenue at Ninety-Third Street.

THE TREATMENT OF MEGACOLON WITH PARASYMPATHETIC DRUGS

JOHN L. LAW, M.D.

ANN ARBOR, MICH.

It is now generally accepted that the cause of megacolon is imbalance of the autonomic nerve stimuli to the colon. There are two neurogenic hypotheses. One is that excess of sympathetic activity by inhibiting colonic contraction and by contracting the sphincters produces constipation; the other that a diminished tonus of the parasympathetic innervation leads to poor peristaltic contraction and inefficient relaxation of the internal sphincter which disturbs the normal physiologic equilibrium.

Overactivity of the sympathetics is difficult to demonstrate clinically. Spinal anesthesia may be used as a test to block out the sympathetics and to see whether the bowels will move. This test, however, may block the parasympathetics as well and therefore the interpretation is equivocal. Consequently in the treatment of megacolon sympathectomy is usually done solely on an empirical basis.

In the last twelve years interruption of the sympathetic nerve to the colon has proved successful in relieving constipation in the majority of cases in which the operation was done. Despite the beneficial results of sympathectomy (by blocking out sympathetic inhibitory stimuli to the colon) there are certain limiting factors to operation.

1. *Age.*—Children below the age of 4 years stand the operation poorly, with minimal benefits.

2. *Stage of the Disease.*—In patients with marked colonic dilatation and a thin, weak musculature, operation is not apt to be successful.

3. *Diagnostic Test.*—In the absence of a dependable test for sympathetic hyperactivity, parasympathetic stimulation rather than a block of the sympathetics may be the best therapy in an individual case.

Parasympathetic stimulation affects the colon and sphincters as a functional unit (contracts the colon, relaxes the intestinal sphincter and leads to evacuation).

For this reason the therapeutic use of a drug which will stimulate the parasympathetics is a logical approach in the management of megacolon.

The drug of choice is acetylcholine or one of its derivatives. The acetylcholine group slows the heart, lowers the blood pressure, dilates the peripheral blood vessels, stimulates sweat glands and increases intestinal tone and peristalsis; it may constrict the bronchioles and incite an asthmatic attack in an allergic patient, or it may produce abdominal pain and vomiting if the dose is too large.

Although physiologically potent for increasing peristalsis and producing evacuation, there has been a general defection from the therapeutic use of acetylcholine and its derivatives. There are several reasons for this defection.

1. The earliest product (acetylcholine) is therapeutically limited because it is rapidly hydrolyzed to less active substances by esterases in the blood stream. Oral administration is not effective, and subcutaneous injection is usually attended by undesirable toxic manifestations (slow pulse, fall in blood pressure, abdominal pain and the like).

2. The latest products (acetyl-beta-methylcholine chloride and acetyl-beta-methylcholine bromide), derivatives of acetylcholine, are much more stable in the body, producing a more lasting stimulation of the parasympathetics. Acetyl-beta-methylcholine chloride may be given by injection, but the adjustment of dosage to effect evacuation without causing marked toxic symptoms has proved too difficult for clinical use. Thus one finds scattered references to its use in abortive therapeutic trials. Acetyl-beta-methylcholine bromide is sufficiently stable to be put in tablet form suitable for oral administration. No record has been found of this preparation being used in the treatment of megacolon.

3. These cholinergic drugs have not been successfully utilized, partly because by their use immediate correction of constipation was expected. Regular bowel function, even in normal individuals, depends on habit, diet and reasonable care. In megacolon neither drugs nor sympathetic nerve interruption can correct a pathologic functional mechanism in a day or two. It takes time to set up a new reflex habit. In either form of treatment—surgical (sympathectomy) or medical (cholinergic drugs)—a simple auxiliary aid such as liquid petrolatum or an occasional enema is necessary until the evacuation habit is established.

In the last few years with the oral administration of acetyl-beta-methylcholine bromide a satisfactory method of medical management has been gradually evolved. This has developed through four stages:

1. A patient was successfully treated eight years ago by Dr. D. Murray Cowie when he combined carefully adjusted doses of acetylcholine and acetyl-beta-methylcholine chloride and simple medical measures to promote regular evacuation. The boy has had spontaneous daily evacuations for more than two years without medication.

2. Our clinic has received a sufficient number of patients suffering from megacolon in the treatment of whom we could make progress in therapeutic management by the detail trial and error method.

3. On patients in whom sympathectomy was performed it was observed that most of them required time (one or more weeks) and assistance with liquid petrolatum or enemas to establish good bowel habits following operation.

4. The superiority of acetyl-beta-methylcholine bromide in its stability and its more prolonged peristaltic action with minimal toxic effects has enabled us to use this drug successfully in the treatment of megacolon.

THE METHOD OF MANAGEMENT

Untreated patients with megacolon commonly have fecal loading concretions and gaseous distention. These conditions are first relieved with oil or soap-suds enemas once or twice a day for several days. In addition from one half to 1 ounce (15 to 30 cc.) of liquid petrolatum is given by mouth each night. When the colon is unloaded a sigmoidoscopic examination is done, if indicated, and this is followed by a half-strength barium sulfate enema for fluoroscopic and local roentger. diagnosis. After the barium sulfate is evacuated acetyl-beta-methylcholine bromide is begun in moderate daily doses and gradually increased up to an optimum effect.

The approach must be gradual and the acetyl-beta-methylcholine bromide must be assisted by giving from one half to 1 ounce of liquid petrolatum each night and enemas when required. Usually it takes from five to ten days to strike a balance with acetyl-beta-methylcholine bromide so that there are one or two stools a day. Enemas may then be discontinued, but it is best to continue with the liquid petrolatum for several months as a mild mechanical aid.

The most effective times for administration are from one half to one hour after breakfast, in midafternoon or at any juncture to parallel and enhance an observed daily rhythm of the bowels. If given before breakfast, sweating, nausea, abdominal pain and vomiting are apt to occur. The initial average dose of acetyl-beta-methylcholine bromide is from 0.1 to 0.2 Gm. administered from one half to one hour after breakfast, increased in two or three days to 0.2 Gm. In another two or three days it may be further increased if necessary by the addition of from 0.1 Gm. to 0.2 Gm. given in midafternoon. Acetyl-beta-methylcholine bromide is ordinarily effective with 0.2 Gm. given after breakfast, but to initiate evacuation 0.2 Gm. morning and afternoon may be required. If this causes diarrhea the afternoon dose is omitted. When the dosage is found which produces one or two stools a day the patient is discharged, usually taking 0.2 Gm. each morning a half an hour after breakfast and from 1 to 2 tablespoons of liquid petrolatum each evening, with instructions to use an enema in the event of distention or constipation.

It has been our experience that in some of the cases the maintenance dose of acetyl-beta-methylcholine bromide could be reduced from 0.2 to 0.1 Gm. In two cases after several months' therapy it was possible to omit all medication with the exception of liquid petrolatum. Our experience in evolving an effective practical method of administering acetylcholine derivatives in the treatment of megacolon is based on fifteen cases. The progressive improvement in method came haltingly but may be indicated by four groups of cases:

GROUP 1 (three cases).—Cases in which treatment with subcutaneous injections or by oral administration for brief periods gave little benefit. The failure arose from three main factors: The acetylcholine preparations used in this group were too unstable for oral administration, subcutaneous injection produced marked toxic symptoms, and the dosage approach was too abrupt because the time element in correcting constipation was not considered.

GROUP 2 (four cases).—Cases in which initial drug therapy augured success but was abandoned in favor of sympathectomy. The explanation in these instances lies partly in the glances

back to failure with a similar yet more toxic cholinergic drug. Whereas acetylcholine was employed mostly in the first group, acetyl-beta-methylcholine chloride, a more stable and a less toxic product, was used in the second group of cases. At this stage of development, though there was no stable tablet, acetyl-beta-methylcholine chloride could have been used successfully in some cases, either orally in solution or by injection. However, a practical and considerate deterrent to medical management was the evident success of sympathectomy.

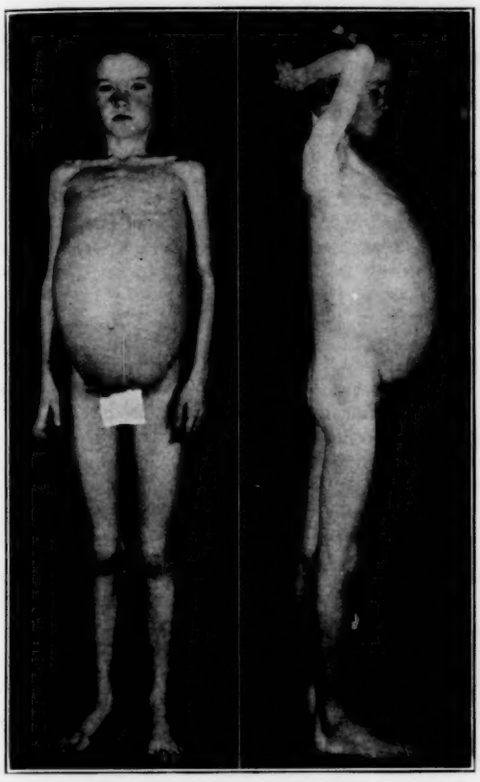

Fig. 1 (case 4, group 4).—Front and side views of a girl aged 7 years, showing malnutrition and marked enlargement and distention of the abdomen in an advanced case of megacolon. Three days after acetyl-beta-methylcholine bromide was started she responded with regular bowel movements. She has remained well for nearly two years and for the past six months has evacuated regularly without any medication except liquid petrolatum.

GROUP 3 (two cases).—Cases in which, after sympathectomy, obstinate relapse occurred, were relieved by acetyl-beta-methylcholine bromide. During this period, which overlaps the period of the cases in group 4, the more stable, longer acting and less toxic preparation for oral administration became available (acetyl-beta-methylcholine bromide). In sympathectomized patients the brake mechanism of excessive sympathetic stimuli has been removed. Relapse to constipation must therefore be due to failure of contractile power of the colon caused by either insufficient parasympathetic stimulation or by contractile failure in a dilated thin walled weak colon. In patients with strong visible peristalsis who were accepted as having sufficient colonic muscular power and were in need of enhanced parasympathetic stimuli, administration of acetyl-beta-methylcholine bromide gave successful results.

GROUP 4 (six cases).—Cases in which, with one exception, treatment consisted solely of medical means with our method of management, acetyl-beta-methylcholine bromide being employed. All patients responded by having satisfactory daily evacuations. One patient, however, died of bromide poisoning caused by idiosyncrasy to the drug. Such an occurrence is rare, yet it emphasizes the desirability of watching for the early signs of an intolerance to bromide. If the patient with bromide poisoning is omitted, six children with megacolon have been successfully managed with the oral administration of acetyl-beta-methylcholine bromide and liquid petrolatum. These patients have been treated for periods varying from three months to nine months without relapse except when acetyl-beta-methylcholine bromide was inadvertently omitted. In two of these cases it was possible to discontinue all medication except liquid petrolatum. Acetyl-beta-methylcholine bromide was discontinued in a 12 year old boy after three months of treatment, and he has continued to have daily evacuations for the past four months.

A 7 year old girl was treated for nine months. She has remained well without medication for more than eight months.

The patients treated with acetyl-beta-methylcholine bromide responded with daily evacuations, a decrease in the degree of abdominal distention, a general improvement in the physical condition and a gain in weight.

REPORT OF CASE

CASE 4 (group 4).—Y. R. S., a girl aged 7 years, had had obstinate constipation from birth, with marked constipation and considerable distention in the preceding few months. Previous treatment was with liquid petrolatum and frequent enemas. On physical examination the patient was underdeveloped and malnourished. She appeared chronically ill. The abdomen was markedly distended and tympanitic. The outline of the colon could be traced by palpation. It was distended and filled with firm fecal masses.

Roentgen examination was by barium sulfate enema. There was great enlargement of the entire colon with the exception of the distal sigmoid and rectum.

The patient was on a house diet, cleansing enemas and liquid petrolatum daily for three days followed by a one-half strength barium sulfate enema for topical diagnosis. Enemas were given for evacuation of the barium sulfate. Then acetyl-beta-methylcholine bromide was begun, 0.2 Gm. half an hour after breakfast, and in three days the bowels moved and continued to move daily for sixteen days. The distention decreased; she gained weight and felt better. There were no significant toxic symptoms. She was sent home on 0.2 Gm. of acetyl-beta-methylcholine bromide and 1 tablespoon of liquid petrolatum each evening. She remained well for two months until the supply of tablets ran out, when it was necessary to use enemas.

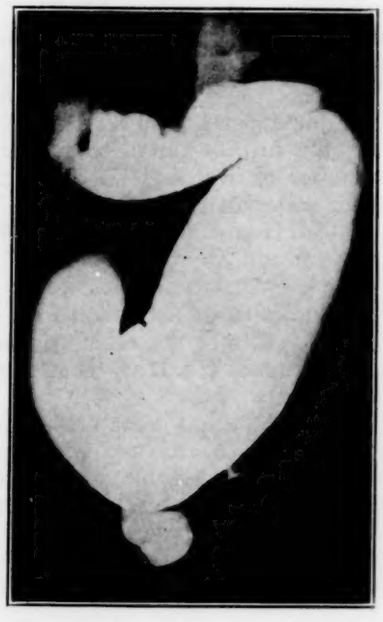

Fig. 2 (case 4, group 4).—Appearance after a barium sulfate enema demonstrated the marked colonic enlargement in this patient.

The return of constipation and distention without medication brought the patient back to the hospital, where fecal accumulations were removed with enemas. She was again given 0.2 Gm. of acetyl-beta-methylcholine bromide half an hour after breakfast, and daily stools were established the next day. After discharge normal bowel movements were maintained on 0.2 Gm. acetyl-beta-methylcholine bromide for six months, when the tablets again ran out, but this time she continued to have normal stools with the aid of 1 tablespoon of liquid petrolatum each night. She has remained well for the past eight months.

At the time of a check-up examination one year after the first admission the patient had gained 8 pounds (3.6 Kg.). She was still undernourished and had no vigor. The abdomen was

moderately enlarged and soft and there were no fecal masses. Roentgen examination after a barium sulfate enema showed the colon comparable in size to what it had been the year before.

SUMMARY

Megacolon is probably caused by an imbalance of nerve stimuli to the colon from the autonomic sympathetic or parasympathetic nervous system.

There are two etiologic hypotheses: hyperactivity of the sympathetic and diminished tonus of the parasympathetic nervous system.

On the basis of these hypotheses and from clinical experience there are two satisfactory methods of treatment: One is sympathectomy, which blocks out sympathetic inhibitory stimuli to the colon. There are some limitations to this operative form of treatment. The other consists of the oral administration of a cholinergic drug, acetyl-beta-methylcholine bromide, which stimulates parasympathetic action. No limitations in the selection of cases for treatment have as yet been encountered.

The treatment of six children suffering from megacolon with acetyl-beta-methylcholine bromide and liquid petrolatum was entirely successful. Two of these patients could discontinue the drug after three and nine months respectively.

The result of several years' treatment by this method is awaited as well as its success in other clinics.

DERMATITIS FROM ELASTI-GLASS GARTERS AND WRIST WATCH STRAPS

ERWIN P. ZEISLER, M.D.

CHICAGO

The recent development of synthetic chemical compounds has led to their employment in the garment industry for the manufacture of various articles of wearing apparel. Too short a period of time has elapsed for the manufacturers to realize adequately the possibilities of injurious effects to the skin from contact with materials made from these substances. Approximately seven months ago a new flexible synthetic resin was introduced by the plastics division of one of our large chemical companies under a special trade name that indicates its derivation from a vinyl resin. Plasticizing agents of the ester type are used as modifiers. This material is a thick, transparent, flexible substance that stretches like rubber and melts rapidly when heated. At the present time it is being manufactured into garters, belts, suspenders and wrist watch straps under the trade name "elasti-glass." It is also being used for dental plates. The garters are made with perforations in order to allow freer access of air. The following two instances of an acute dermatitis of a characteristic type from contact with garters, suspenders and wrist watch straps made of this material have not, to my knowledge, been reported in the literature and are, therefore, worthy of comment:

REPORT OF CASES

CASE 1.—A manufacturer aged 52, seen April 25, 1940, reported that he had worn a pair of garters made of "elasti-glass" for the past four weeks and that during the last week he had noted a progressively increasing redness and itching around the calves of the legs. The garters were worn in direct contact with the skin. At the same time he noted some irritation across the shoulders where suspenders of the same material had been worn. Examination showed a livid red, sharply defined area of erythematopapular dermatitis with some scaling in a band several centimeters in diameter around the calves of both legs and a triangular patch over the upper tibial region composed of closely set, deep red follicular papules on an erythematous base. There was some edema of the ankles, and moderate pruritus was complained of. The eruption obviously conformed to the shape of the garter which the patient brought with him, and there was no difficulty in recognizing this as an unusual instance of dermatitis from this source. There was no history of any previous cutaneous disorder of any type. Across each shoulder there was also noted an erythematous bandlike dermatitis which had developed from wearing suspenders of the same material, even though there had been no direct contact with the skin. A patch test applied to the patient's forearm for a period of twenty-four hours with a small square piece of the material gave a markedly positive reaction. Patch tests made on a small group of normal persons have given uniformly negative results. The patient was advised to discontinue wearing the garters and suspenders and under treatment with cold compresses of a mild astringent solution and a soothing cream the dermatitis slowly subsided. When seen five days later the redness was much less marked but there was still some edema of the legs present, and a more disseminate faint pinpoint papular follicular eruption was noted over both lower legs. An examination of the urine at this time gave negative results. The patient also reported that several friends of his had had to discontinue wearing the garters on account of the irritation resulting after several weeks' wear.

It would appear, therefore, that the present case is not an isolated one and that further studies of the toxic effects on the skin of this particular synthetic resin should be undertaken before its use becomes widespread.

CASE 2.—An attorney aged 54 began to wear a new wrist watch strap made of "elasti-glass" on April 7, 1940. After two weeks he noticed severe itching, redness and swelling immediately under the strap. A physician was consulted on April 23, who gave him several injections of calcium gluconate and various ointments, with gradual improvement of the eruption. When seen by me on May 4 there were still present a markedly eczematous, scaling dermatitis of papulo-erythematous type in a broad band around the wrist and some scattered erythematous lesions over the lower part of the forearm. He gave no history of any preceding cutaneous complaints. The dermatitis had been sufficiently severe to interfere with sleep and had caused a good deal of local discomfort. Patch tests were not made in this case, as the diagnosis was obvious. The persistence of the dermatitis is noteworthy.

COMMENT

Synthetic resins are widely manufactured in the United States and, according to Schwartz and Tulipan,[1] are used for many purposes: (1) for making plastics such as push buttons, pipe stems, cigar holders, bottle caps, buttons, ornaments, telephone receivers and plates for artificial teeth; (2) for making varnishes, flexible coatings and floor finishes; (3) for making cements, gears, dishes, water containers and rubber compounds. Apparently at this time they had not been used for manufacturing articles of wearing apparel. Dermatitis has been a frequent occurrence among workers with synthetic resin, particularly when phenol-formaldehyde and urea-formaldehyde resins were used in molding. Most of the cases occurred in the summer months, and it was thought that the hot weather and perspiration increased the incidence of dermatitis. The resins are of three types: The first group consist of phenol-formaldehyde resins made in two principal varieties, a case resin and molding resin, in the manufacture of

1. Schwartz and Tulipan: Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939, p. 356.

which formaldehyde is given off and in many workers a dermatitis from this source develops. In others irritation developed from the action of the phenol and from the hexamethylenetetramine employed in the manufacturing process. However, the skin hazards from the finished products are said to be negligible, as no phenol or formaldehyde is given off by the finished product. The second group consist of the urea-formaldehyde resins, more recently manufactured on a commercial scale, in which the incidence of dermatitis from formaldehyde and "hexa" is of less common occurrence. Dermatitis among the users of these molded resins is rare but has been reported when too much "hexa" has been used in the molding process or too much phenol, which may act as an irritant in a hypersensitive person. A third group consist of the cumaron resins made from

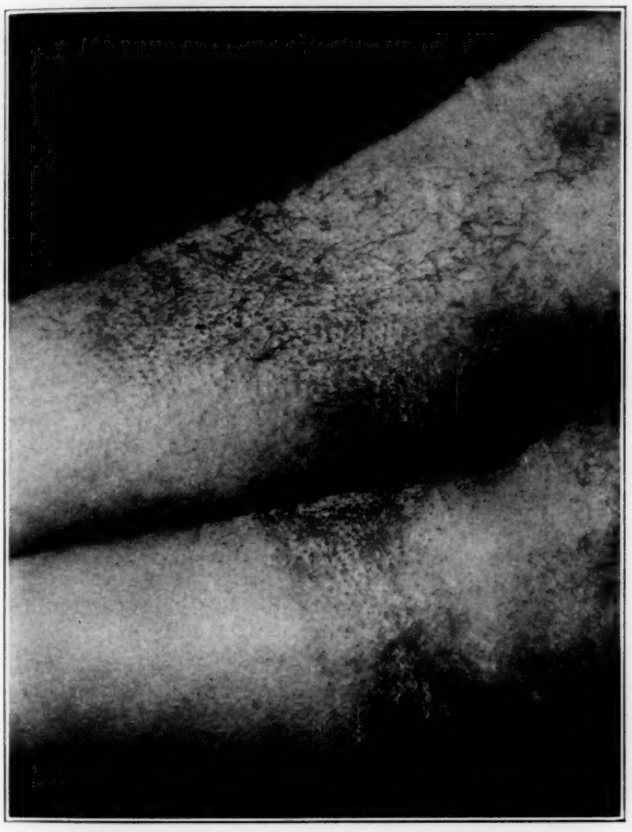

Fig. 1.—Follicular papular dermatitis from wearing of "elasti-glass" garters.

crude coal tar distillate. Dermatitis has been reported by one author in the manufacture of safety glass in which process sheets of vinyl resin were dusted with sodium bicarbonate to prevent them from adhering. There have been no reported cases of dermatitis among the workers in the plant where elasti-glass is manufactured.

According to Schwartz and Tulipan it is necessary in cases of dermatitis attributed to the use of synthetic resins or resin plastics to establish the following facts: (1) that the dermatitis followed contact with the resin, (2) that the portion of the skin in contact with the resin is first affected and (3) that a positive patch test is demonstrated on healthy skin near the site of the eruption. In order to determine the chemical irritant accurately it would be necessary to know the exact ingredients of the chemicals composing the resins and to make patch tests on the patient with each of these in dilutions known to be nonirritating to normal skins.

"Elasti-glass," according to a sketchy account obtained from a representative of the company manufacturing it, is a synthetic resin made from a natural gas in which the principal base products are vinyl acetate and vinyl chloride. Tricresyl phosphate has been used as a plasticizer, and more recently dibutyl phthalate. Minute amounts of organic tin stabilizers,

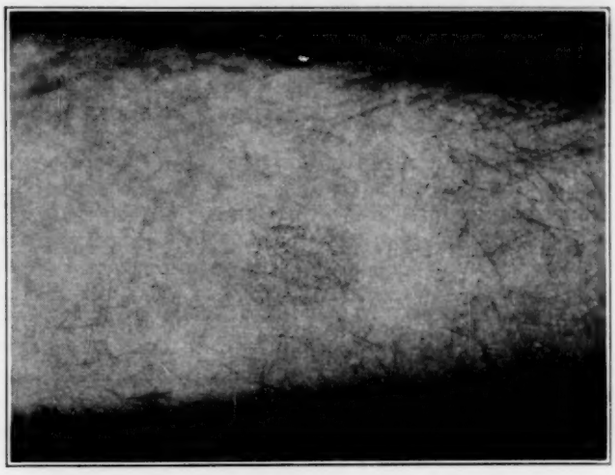

Fig. 2.—Positive patch test with "elasti-glass."

castor oil and carnauba wax enter into the composition. Chemical tests of the finished product for these substances are said to have given negative results. Phenol, formaldehyde and hexamethylenetetramine are not used in the manufacturing process. According to Merck's index (fifth edition, 1940) vinyl acetate is CH_3-CO_2-CH-CH_2 obtained by the interaction of acetylene and acetic acid in the presence of a suitable catalyst. It is a colorless liquid which on exposure to light polymerizes to a colorless transparent mass and is

Fig. 3.—Eczematous dermatitis from wearing of "elasti-glass" wrist watch strap.

used for plastic masses, films and lacquers. Vinyl chloride is a colorless gas (chlorethylene CH_2: CHcl) which also polymerizes in the presence of a catalyst. Vinyl trichloride or trichlorethane ($CH_2Cl.CHCl_2$) is a colorless noninflammable liquid used as a solvent for fats, waxes, natural resins and alkaloids. According

2. Chem. Industries **40**, pt. II, June 1937.

to the list of chemicals known to be or which can be skin irritants taken from *Chemical Industries*,[2] beta-trichlorethane, or vinyl trichloride, is toxic to a certain extent. Tricresyl phosphate is also listed, but nothing is stated about its toxicity. It is used as a plasticizer in cellulose ester varnishes, lacquers and plastics. The organic tin stabilizers which are used to give the plastic masses their elasticity are, in their pure form, vesicants similar to those used in the manufacture of mustard gas. One of the difficulties in patch testing patients with some of these materials would be to find out the dilutions which would not cause a reaction in normal skin.

My conclusion from observation of these two cases is that the dermatitis is due to a specific sensitivity induced by intimate and prolonged contact with a heavy nonporous, impervious material. The negative patch tests are obviously not a sufficient criterion of noninjurious effects, as the ordinary method of applying the test material to the skin does not correspond to the effect of wearing a constricting band against the skin over a long period of time. The dermatitis, in my opinion, is the result of mechanical friction, overheating of the skin due to impermeability to air with resulting perspiration and chemical absorption into the skin. The follicular-papular character of the eruption suggests a chemical effect on the hair follicles of a specific type. The dissemination beyond the site of contact also indicates chemical absorption rather than a purely mechanical irritation. The exact chemical that is responsible for this effect remains to be determined. Our assumption would be that "elasti-glass" tends to hydrolyze when in contact with the moisture of the skin and that in this way irritating compounds of the tricresyl, tin or some other chemical group are produced.

Further studies should be undertaken to determine the nature of the skin irritant, and the various steps in the manufacturing process should be checked for possible sources of error before this material is permitted to be used on a more extensive scale in articles of wearing apparel.[3] In fairness to the manufacturers, it should however be stated that clinical trials on actual wearers of the finished products were carried out for some time before they were released and that only an occasional case of irritant effect was observed. At least 250,000 garters, wrist watch and suspender sets of this material have been sold and about twenty cases of dermatitis have been reported from various parts of the country. During the three weeks prior to May 20 an additional eight cases have been reported to me by various physicians in Chicago. It would seem logical that the incidence of the dermatitis would increase during the hot weather owing to the impervious character of the material and to the greater chance of chemical absorption.

30 North Michigan Avenue.

3. The manufacturers of "elasti-glass" have not seen fit to supply the author with the chemicals entering into the composition of the resin for experimental patch-testing. To the best of his knowledge this work is being done in another institution. In all probability it will be found that sensitization to one of the organic tin stabilizers is the cause of the dermatitis.

Limiting the Spread of Bubonic Plague.—The modern methods comprise four main features: 1. Early detection of human or rodent plague in ships or on land. 2. Isolation of persons infected. 3. Prompt destruction of rats and their fleas. 4. Rat repression or exclusion. We must remember, as Fabian Hirst has shown, that plague may be carried in infected fleas in cargo without the disease existing among the rats on a ship.—Scott, H. Harold: A History of Tropical Medicine, Baltimore, Williams & Wilkins Company, 1939.

Clinical Notes, Suggestions and New Instruments

TWO CASES OF BILATERAL CONGENITAL DISLOCATION OF THE HEAD OF THE RADIUS

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"There is very little if any reference in the British literature to congenital dislocation of the head of the radius," says Bryan McFarland[1] in his report of eleven cases. These cases were all unilateral and irreducible. He operated on five of the patients, removing the head of the radius, and advised operation if any was necessary. None of McFarland's cases were complicated by any other condition such as Erb's paralysis or radio-ulnar synostosis. At operation he found that the head of the radius was flat and out of the capsule, there was no orbicular ligament, no lesser coronoid fossa, the head of the radius was misshapen and the radius was too long.

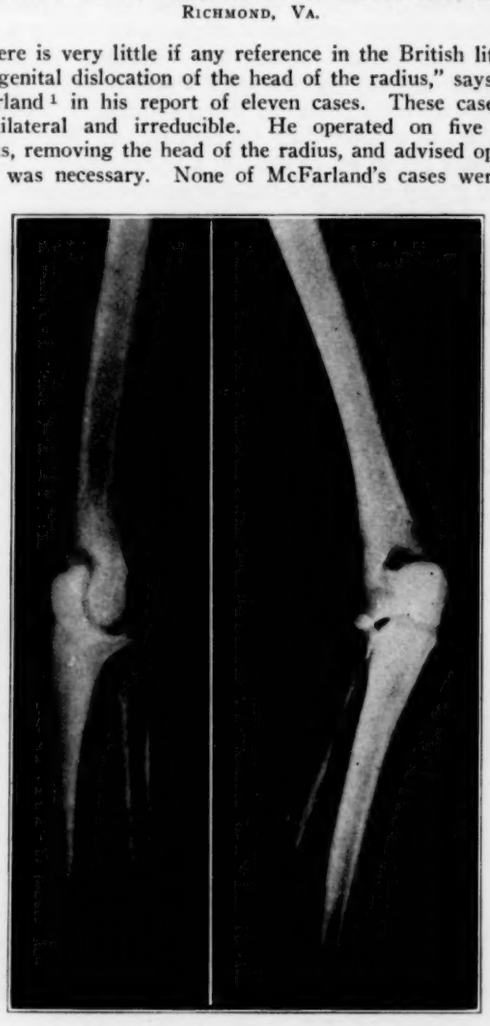

Fig. 1 (case 2).—Appearance of the elbows.

In searching through several textbooks, we found that Keen[2] gave the best description and stated that fifty-one cases had been reported up to 1907. There is slight if any reference to this condition in the newer textbooks. Of the seven cases reported by Keen more than half were associated with some other condition, and most instances occurred in males. Most of his patients had a great deal of disability, and he advised removal of the head of the radius as treatment. McFarland reported the greatest number of cases and gives the best description of the condition. Although few textbooks mention this deformity, it was reported as early as 1891 by Bessel-Hagen,[3] who described the pathologic changes in the head of the radius.

From the Orthopedic Service of the Hospital Division, Medical College of Virginia.

1. McFarland, Bryan: Brit. J. Surg. **24**: 41 (July) 1936.
2. Keen, W. W.: Surgery, Its Principles and Practice, ed. 7, Philadelphia, W. B. Saunders Company, 1907, vol. 2.
3. Bessel-Hagen, F.: Arch. f. klin. Chir. **41**: 420, 1891.

In 1892 Abbott [4] reported seven cases in one family through four generations and suggested a hereditary tendency. In 1893 Bonnenberg reported an operation in which he removed the head of the radius and the styloid process of the ulna to obtain pronation. Powers [5] stated that Bonnenberg collected thirty cases, of which only twelve were bilateral. Whitman [6] in 1923 refers to fifty-three cases, and in 1938 Rose [7] reported one case with a review of the literature.

We have had the opportunity of seeing two cases, which are reported here.

REPORT OF CASES

CASE 1.—J. P., a Negro aged 40, was referred to us because of a deformity of the elbow. On questioning him we found that he had never been able to flex his arm beyond a right angle. He had had no pain and had very good use of his arm. Examination of the elbow showed a prominent head of each radius, inability to reduce these and inability to flex the arm forcibly beyond a right angle; pronation was restricted.

X-ray examination confirmed our diagnosis of bilateral congenital dislocation of the head of the radius. The Wassermann reaction of both the blood and the spinal fluid was positive, and a parkinsonian type of tremor and stare were present. No treatment was advised in this case.

CASE 2.—L. C., a boy aged 15, was admitted to the dispensary complaining of snapping elbows. He stated that at times his elbows ached a great deal after use and that he was unable to pass plates and dishes at the table because his elbows would snap and cause him to spill the food. He stated that this condition had always been present but was growing worse each year. Examination of both elbows showed a rather marked increase in carrying angles. The arms could be completely extended and flexed voluntarily and pronation was only slightly restricted. On extension of the arms there would be a snapping forward of the heads of the radii, but these would be reduced on flexion. X-ray examination with the arms extended revealed bilateral dislocation of the head of each radius.

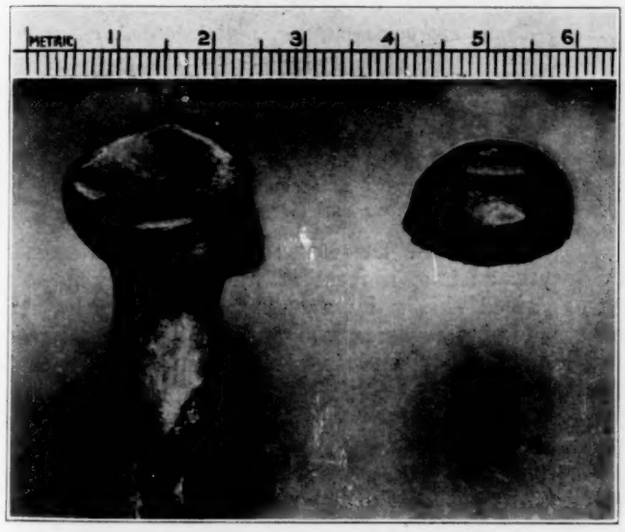

Fig. 2 (case 2).—The excised head of the radius with a normal head for comparison. Note the oval conformation of the removed head.

We felt that, owing to the age of the patient, the already increased carrying angle and the fact that the radii were easily reduced, it might be a good plan to anchor the heads in place. This was attempted by reducing the head and putting a sling of fascia lata round the radial neck. This was then sutured to the olecranon and the capsule was plicated, but on extension the fascia lata was torn. The idea of retaining the head was given up and it was removed. The head was seen to be convex and small and the coronoid fossa ill formed, which explained the reason why the head could not be held in position. Two weeks later, the head of the right radius was removed. No attempt was made to retain it, since it was also found to be convex on its end.

One year after operation, the patient has excellent use of both arms, extension is probably slightly limited but flexion and pronation are normal. The carrying angle has not increased.

COMMENT

Congenital dislocation of the head of the radius is relatively rare. The pathologic condition is such that operation other than removal of the head is not satisfactory.

307 Professional Building.

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5. Powers, C. A.: Congenital Dislocations of the Radius, J. A. M. A. **41**: 165 (July 18) 1903.
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TYPHOID ABSCESS OF THE SPLEEN IN HEMOLYTIC JAUNDICE

J. LOUIS RANSOHOFF, M.D., AND WILLIAM O'ROURKE, M.D., CINCINNATI

In no other form of splenomegaly are the indications for splenectomy so definite as in familial hemolytic jaundice. The disease is characterized by increased fragility of the red cells in hypotonic salt solution, reticulocytosis and splenic enlargement, with the presence of jaundice and an indirect positive Van den Bergh test. The underlying defect in red cell metabolism is congenital and hereditary, being transmitted according to mendelian principles.

The symptoms are characteristic, recurring in cycles and leading to so-called crises in which there are nausea, vomiting, increased jaundice and a progressive anemia. These symptoms, together with the family history and the laboratory observations, make the diagnosis almost obvious.

Splenectomy in these cases is clearly indicated and yields uniformly brilliant results. This is confirmed by our knowledge of the role of the spleen in the destruction of red blood cells. This destruction of red blood cells is a function of the reticuloendothelial system, of which the spleen is the dominant factor. Though only a portion of this system is removed by splenectomy, this is sufficient to restore red cell metabolism to a normal level.

If possible, splenectomy should not be done in the presence of a crisis, as this greatly enhances the danger of the operation. This delay is occasionally inadvisable because of the maintenance of the crisis or of complications which make immediate operation imperative. Preoperative transfusion should of course be the rule.

Splenectomy in this disease is comparatively simple and free from danger, as the spleen is usually not adherent to the diaphragm or other abdominal viscera. In Andrus's series of fifteen cases there was no fatality; in our own series of eight cases there was no death.

In this type of disease the injection of epinephrine into the spleen at the moment of delivery is important for two reasons. First, the organ is decreased in size, toughened and so less likely to tear. Second, the expulsion of blood from the spleen serves as an autotransfusion.

The following case shows that in some instances splenectomy must be done, no matter what the complications may be. This was a case of hemolytic jaundice, complicated by pregnancy and typhoid abscess of the spleen.

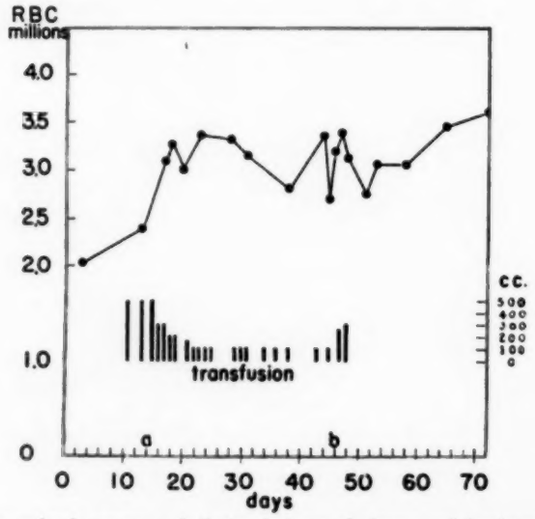
REPORT OF CASE

A white woman aged 21 was admitted to the Jewish Hospital in the fourth month of pregnancy. For the past six weeks she had had loss of strength, with a daily temperature range to 102 F. During the six weeks before admittance to the hospital the spleen, which was enlarged, had increased definitely in size. During this same period the red blood cell count had varied between 1,800,000 and 2,300,000. There was nothing in the history suggestive of a typhoid infection, but the typhoid agglutination test before admission was positive. The past history of the patient indicated that since the age of 4 years

she had several attacks of jaundice each year. Each attack would last from two to five weeks, and at such times the urine was very dark and the stools of normal color. The spleen was first noticed to be enlarged in 1934, at which time there were jaundice, fever and anemia, with a red cell count of 2,180,000. During these years, several examinations showed an increased fragility of the red blood cells and a positive indirect Van den Bergh test. The only relevant part of the paternal history was the fact that the father and paternal grandfather had had recurrent attacks of jaundice throughout life.

The general examination of the patient showed a tremendous enlargement of the spleen, which almost filled that part of the abdomen which was not occupied by the pregnant uterus. After admission to the hospital, blood examination showed red blood cells 2,030,000, white blood cells 9,400,000, polymorphonuclears 81 per cent, lymphocytes 15 per cent, monocytes 4 per cent, platelets 149,000, reticulocytes 4.3 per cent, coagulation time three minutes thirty seconds, bleeding time three minutes fifteen seconds, anisocytosis marked, poikilocytosis marked, cholesterol 240 mg., the Van den Bergh direct test was negative and the indirect test positive, 3.4 mg. The Widal test was strongly positive. The red cell fragility was increased; hemolysis began in a 0.50 per cent solution and was complete at 0.38 per cent. Sternal puncture revealed very hyperplastic bone marrow and a large number of nucleated red blood cells. The patient was given blood transfusion, with the idea of doing a splenectomy. In spite of the positive Widal test, the presence of typhoid was not seriously considered.

On October 8 a splenectomy was attempted, but when the peritoneal cavity was entered the spleen was seen to be greatly enlarged and its surface was adherent to the parietal peritoneum. While these adhesions were being loosened an abscess cavity was opened and a large amount of yellow pus exuded from the spleen. Naturally, fear of contaminating the peritoneal cavity prevented further maneuvers; so a cigaret drain was inserted into the abscess cavity through a stab wound, and the abdomen was closed. Much to our surprise, the pus yielded a pure culture of typhoid bacilli.



The patient's course; *a*, indicates drainage of abscess and *b* splenectomy.

The immediate postoperative recovery was good. The red cell count remained at approximately 3,000,000, but it was found necessary to give several blood transfusions a week; otherwise the patient became weaker and more icteric. As indicated by the accompanying graph, blood transfusions were given almost daily during the thirty day period between the abscess drainage and splenectomy.

The question here arose as to whether or not the pregnancy should be interrupted before attempting splenectomy, as it was evident that the patient could not subsist very much longer in the way she was going. It was decided to do a splenectomy as a less dangerous procedure.

Therefore, thirty days after the abscess drainage, the old scar was opened, the adhesions were freed, and a splenectomy was done. The spleen weighed 1,475 Gm. Microscopic section of the spleen showed a marked abundance of red blood cells, and the splenic pulp was very indistinct. There was still the remnant of a splenic abscess. After a short febrile reaction following operation, the patient made an uneventful recovery, as shown by the chart.

On December 5, the day before the patient was dismissed from the hospital, the fragility test was normal, the red blood count 3,600,000 and the hemoglobin level 70 per cent. After she returned home, several blood counts were made by the attending physician and her recovery continued. She delivered at term and has remained well ever since.

A blood count was made on the infant. The red cell count was 4,000,000, hemoglobin level 54 per cent and white cell count 1,500,000, with 9 per cent polymorphonuclears and 87 per cent lymphocytes. The red cells were normal.

A search through the literature has failed to reveal any case of splenomegaly of this type, associated with abscess formation. Naturally, abscesses of the spleen have decreased and become almost a rarity since the decrease in frequency of typhoid, which is almost unknown in metropolitan areas.

707 Race Street.

Special Article

CONFERENCES ON THERAPY

TREATMENT OF BLOOD DISORDERS

V. MICROCYTIC ANEMIA

NOTE.—*These are actual reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with the collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students and visitors. The next report will concern "Treatment of Blood Disorders: VI. Pernicious and Other Macrocytic Anemias."*

DR. EUGENE F. DU BOIS: Our subject today is microcytic anemia, a form of iron deficiency anemia characterized chiefly by a subnormal number of red cells containing a subnormal amount of hemoglobin. Dr. Rhoads of Memorial Hospital will open the discussion.

DR. CORNELIUS P. RHOADS: Some nine years ago Dr. Castle, of Boston, and I were associated in the Second Rockefeller Commission for the Study of Anemia in the Tropics. We found that the problem in those regions was in principle exactly the same as the problem of anemia in temperate zones. Sprue, as I told you last year, proved to be analogous in many respects to pernicious anemia, since it is characterized by a macrocytic anemia, a consistent increase in the amount of serum bilirubin, and leukopenia. It can be cured, moreover, by the administration of a crude liver extract which is effective in pernicious anemia.

The microcytic type of anemia which occurs in the presence of hookworm infection was found to be analogous to iron deficiency anemia of temperate zones. The existence of this hookworm anemia was the real reason for the formation of the commission. Field workers in the West Indies had concluded that the cause of disability in hookworm infection is not the presence of the parasites per se but is the very severe anemia so frequently associated with their presence and supposed to be due to it. It may be recalled that some twenty years ago an extensive campaign was instituted

for the deworming of individuals in regions where hookworm disease was endemic. Furthermore, prophylactic measures were instituted, such as building latrines and supplying shoes. It was supposed that these obvious procedures for the prevention of reinfection would control the disorder, but the anemia persisted in spite of them, provided it was well established when the parasites were removed.

A study of the factors causative of hookworm anemia made clear the fact that it differed in no essential respect from idiopathic achlorhydric microcytic anemia encountered in northern latitudes. This was so striking that I employ here the results of our study of hookworm anemia to illustrate the principles of the cause and the cure of the so-called idiopathic disorder.

Microcytic anemia is most common in women; it is frequently associated with achlorhydria, with atrophic glossitis and sometimes with koilonychia. It is cured dramatically by the administration of iron. The blood in this disorder is marked by microcytosis; that is, the presence of erythrocytes which are smaller than normal and contain subnormal amounts of hemoglobin. That pigment is made up of a protein, globin and a complex compound of porphyrin and iron. The curability of the microcytic anemia by the administration of iron is evidence that the condition is caused by a deficiency of that constituent of the erythrocyte. The microcytosis is also evidence for the fact that the production of hemoglobin in microcytic anemia is more seriously interfered with than is the formation of cells. Extensive studies of the microcytic anemia of hookworm disease substantiated this conclusion. In every case it could be shown either that the intake of iron was inadequate or that the rate of its loss was abnormally great. Frequently both factors seemed to be operative. Insufficient intake may result from insufficient iron in the food or from the subnormal absorption of adequate amounts. However, it is not easy to cause an iron deficiency by feeding diets low in their content of that element, because there is a tendency for the body to increase its rate of absorption of iron when need for it exists. This fact has been strikingly demonstrated by the experiments of Dr. Whipple with radioactive iron.

The protective mechanism for the absorption of iron probably accounts for the fact that loss of iron as blood is by far the most common cause of microcytosis. Very considerable amounts of hemoglobin, as much as 6 Gm., may be lost at each menstrual period, and even more from any source of long-continued hemorrhage. Since regular loss of blood is most common in women, they most frequently contract an iron deficiency with resultant microcytic anemia. Indeed, it is safe to say that microcytic anemia unassociated with loss of blood is an extreme rarity, and when faced with microcytosis the physician cannot be urged too strongly to institute a serious search for a source of bleeding, either chronic or intermittent. Repeatedly patients are sent to the hematologist as problems of unexplained refractory anemia, but that disease never presents microcytosis. That feature should always suggest loss of blood, and a sufficiently careful persistent search of the excreta will usually reveal blood even though it may be present only on rare occasions. It is amazing how frequently patients may be completely unaware of chronic persistent or intermittent severe hemorrhage and how difficult it is to persuade the physician to make repeated examinations of feces.

To summarize, microcytic anemia is due to iron deficiency, resulting from an abnormally great loss, a subnormal intake or both. It rarely occurs in adults, no matter how low the intake, unless the loss is increased. If the intake is high enough it is difficult to induce microcytic anemia unless the loss is very great indeed.

In our studies in the tropics we had this concept as a background and were faced with the problem of microcytic anemia of most severe degree. Careful study revealed that practically every factor required for the production of microcytic anemia was present in these patients. Analysis of the diets taken revealed the fact that they were exceedingly low in their content of iron. Study of the gastric secretion proved that achlorhydria was very common, and thus, according to the studies of Dr. Minot and his co-workers, there was reason to suppose that there might be interference with the absorption of iron. Diarrhea was frequent, which suggested that in the presence of abnormally rapid intestinal motility sufficient time might not be available for the proper absorption of iron. Finally, there was a chronic persistent loss of blood in the feces which was caused by the parasites. The results of careful studies prove that each hookworm may withdraw a perceptible amount of blood from the intestinal mucosa each day. When the worm burden is great, up to a thousand or more worms, as frequently occurred in our experience, it is apparent that the daily loss of blood may amount to as much as from 10 to 20 cc., or even more.

If this working hypothesis was correct, it should be susceptible of experimental proof. If a real deficiency of iron existed, due either to an inadequate intake of that element in the food or to improper absorption on an ordinarily adequate intake, the deficiency should be so marked that the anemia would not disappear even though the loss of blood caused by the parasites was stopped by their removal. If, on the other hand, the dietary intake was adequate and was properly absorbed, the removal of hookworms as the cause of the loss of blood should result in the cure of the anemia. Furthermore, if both the factors of iron loss and inadequate absorption of iron were operative, neither the removal of hookworms nor the feeding of normal diets would effect the cure. Remission should result, however, if iron was administered in large amounts, sufficient to make up for a deficient absorption.

Clinical experiments were made to establish the facts. No improvement in the levels of blood followed the removal of the hookworms, although adequate evidence was at hand to prove that the loss of iron as hemoglobin caused by the presence of these parasites had been brought to an end. When iron was administered, however, a rapid increase in the levels of circulating hemoglobin ensued. In a second experiment the hookworms were left undisturbed, and a diet composed of 300 Gm. of meat and 1,000 cc. of milk daily was administered as one which was reasonably high in its content of protein and of iron. Essentially no improvement in the levels of hemoglobin was effected. When the diet was supplemented daily with 6 Gm. of iron and ammonium citrates, however, a rapid increase in the levels of hemoglobin and red cells took place and clinical symptoms disappeared. This observation was conclusive evidence that the anemia was due to an iron deficiency. It proved, furthermore, that normal blood levels could be main-

tained if sufficient iron was administered in spite of the continued loss of blood caused by the hookworms. In other words, the results of the experiments indicated that in the treatment of iron deficiency anemia the factors both of intake and of loss of iron must be considered. It was not sufficient simply to put a stop to the loss of blood. It was also necessary to administer sufficient iron to remove the deficiency.

The observations described were made in the hospital in cases under constant supervision, and it was necessary to confirm the results under living conditions native to the affected individuals. Accordingly a similar study was set up in the field and similar results were obtained. The removal of hookworms had little effect on the anemia, but if the hookworms were left in place and iron was administered, dramatic cure was effected.

In view of the clinical observations, it was thought desirable to make certain experimental studies of the anemia of bled animals in order to establish the fact that microcytosis would result from an iron deficiency and, furthermore, that such a deficiency was a limiting factor for the production of erythrocytes. It was postulated that if animals were bled to a constant level of 50 per cent hemoglobin and the diet kept constant, an iron-deficient anemia with microcytosis should result. If the hemoglobin removed in the red cells was returned by the subcutaneous injection of a solution of hemoglobin free of cell stroma, the microcytosis should disappear. Furthermore, if a lack of iron had been a limiting factor in cell production as well as hemoglobin production, the number of cells formed should be much greater.

Exactly these experimental results were obtained. Rabbits were bled from the heart at intervals sufficiently frequent to keep the hemoglobin at a level of 50 per cent. A striking microcytosis resulted. When the hemoglobin was returned, however, the average cell size returned not only to normal but to a level somewhat greater than normal. Moreover, the rate of production of cells when the iron deficiency was removed was nearly twice that observed when it was present. In brief, hemoglobin deficiency is a cause of microcytosis and is also a limiting factor in the production of erythrocytes. If sufficient hemoglobin is provided, extraordinarily great loss of blood may be compensated by the increased rate of production. Iron seems to be the principal factor which limits the production of hemoglobin. It appears that under normal conditions the pyrrole component which forms the porphyrin and the protein component globin can be produced in almost unlimited amounts.

In this regard the experiments of Elvejhem should be recalled. He showed that a deficiency of copper as well as of iron may limit the formation of hemoglobin, an observation which is in accord with the fact that certain copper-protein compounds are integral parts of the red cell. The statement has been frequently made that copper deficiency need not be considered seriously by the practitioner, because considerable amounts of copper are present in all foodstuffs and because iron compounds used in therapy are in general contaminated with sufficient amounts of copper to be therapeutically active in a copper deficiency. The Wisconsin investigators, however, advanced evidence that not all iron is so contaminated and that many foodstuffs are low in their content of copper.

The animal experiments which I have described were based on the fundamental observations of Dr. Whipple. He established the principle of testing the effect of compounds on hemopoiesis by administering them to animals maintained on a constant diet and bled to a constant level of anemia. In this way it was possible to establish that certain foods such as liver and kidney were especially active in facilitating blood formation. From this study the use of liver in pernicious anemia developed. It later became clear, however, that the fraction of liver which was effective in the anemia of bled animals was not the one which is curative of pernicious anemia. The latter is contained in that fraction of liver which is soluble in 70 per cent alcohol, whereas the former is precipitated by this solvent.

In the experiments with hookworm anemia the alcohol-precipitated fraction of liver, or the so-called Whipple fraction, effective in the microcytic anemia of bled animals was tried. It was found to be therapeutically active. This raised the question of whether the Whipple fraction of liver was active because of its content of iron or because of some other factor. Experiments were then made in an attempt to answer this question. The method of the double reticulocyte curve was employed. That is based on the observations of Dr. Minot and his co-workers in Boston, who proved that, if therapeutically effective material is given to patients with either pernicious anemia or microcytic anemia, an increase in the number of circulating reticulocytes occurs promptly and presages the subsequent improvement in hemoglobin levels. They established furthermore that, if two effective substances are given in succession and both cause a rise of reticulocytes, the second is a more potent factor than the first.

Employing this method, we made studies on cases of achlorhydric microcytic anemia to which hemorrhage had contributed. Fifty mg. of iron was injected daily, an amount which was known to be the least required to produce a reticulocyte rise. The patients were observed through the period required for the development of this rise. Then, in a second period, an amount of the Whipple fraction of liver, 25 Gm., which contained by analysis exactly the same amount of iron as had been given in the first period, was administered Second reticulocyte rises were obtained. This was proof that something which was effective in curing microcytic anemia and was not iron was contained in the Whipple liver fraction. This was not a very effective substance however since, when much larger doses of iron were given in a third period, third reticulocyte peaks and much more rapid improvement of blood values took place than in either of the first two periods. In certain cases that fraction of liver which is effective in the cure of pernicious anemia was tried also and absolutely no effect was obtained, clear proof that this substance is of no value in treating microcytic anemia.

In conclusion, microcytic anemia means iron deficiency. Iron deficiency is almost always the result of blood loss, which to induce anemia must be considerable unless the intake or absorption of iron is abnormally low. Every case should be examined with the greatest care for evidence of hemorrhage. Effective treatment requires the administration of sufficiently large amounts of iron containing effective amounts of copper to bring about regeneration of blood. Transfusion should not be used unless the situation is desperate, until the source

of bleeding has been discovered and removed and effective treatment of the anemia instituted. Too frequently the temporary improvement following transfusion has masked the basic cause of the disorder and led the physician to neglect it. The Whipple liver fraction, although of academic interest, is not necessary in therapy of microcytic anemia, and the anti-pernicious anemia fraction is useless.

DISCUSSION OF QUESTIONS

DR. CLAUDE E. FORKNER: I should like to ask Dr. Rhoads if he thinks a deficient diet alone will produce an iron deficiency anemia.

DR. RHOADS: Yes, but rarely. Under ordinary circumstances one ought to take daily 15 mg. of iron to keep in balance, but the body tends to hold on to it remarkably well. I am bound to say that the only dietary iron-deficient anemias I have seen have occurred when the diets were exceedingly bad and were continued for many years. Certainly in our experience ninety-nine cases out of a hundred are associated with loss of blood. Dr. Whipple's recent observations on radioactive iron are exceedingly interesting because he shows that iron is specifically picked up when there is a demand for it by the bled animal with an iron deficiency.

DR. DU BOIS: Is the iron picked up and reexcreted by the normal person but picked up and retained by the anemic person, or does the intestinal wall absorb it only when it needs it?

DR. RHOADS: As I recall Dr. Whipple's paper, he reported that iron was retained by the individual who needed it and not by others.

DR. JANET TRAVELL: Most of these patients with microcytic or hypochromic anemia had poor gastric function with achlorhydria, and I wonder if you did any experiments on the effect of the administration of hydrochloric acid, to see whether that would improve the absorption of iron given either as beef in the diet, or as iron and ammonium citrates, or in any other form.

DR. RHOADS: I have made no experiments concerning that point, but Dr. Minot's group, with Dr. Heath, have some very conclusive studies which show that the addition of hydrochloric acid does facilitate the absorption of minimal doses of iron by achlorhydric individuals. It should be stated that the recent observations of Dr. Fouts have shown that a marked microcytic anemia may develop in the experimental animal even in the presence of adequate dietary iron if the diets are low in vitamin B_6. This observation has been confirmed by Dr. Elvejhem. Furthermore, there is a suggestion that lack of bile pigment, as shown by Heath and by my co-worker Dr. Bomford, may give rise to microcytic anemia of mild degree.

DR. PAUL REZNIKOFF: I should like to cite one experiment we are making on a patient. This is in reply to Dr. Travell's question in relation to hydrochloric acid. The patient was in the hospital here and she was observed very carefully. She had a microcytic, iron deficiency anemia, although her diet was not deficient in any way so far as we could tell. Her menstrual periods were checked and there was no excessive loss of blood. Her stool was examined regularly for blood and no loss could be found there. She was 26 years old and showed no hydrochloric acid following histamine. She was given hydrochloric acid 4 cc. three times a day with meals, and she was also given iron in apparently adequate amounts. The maximum dose was about 400 mg. of iron a day. On this treatment the hemoglobin increased to a certain point. Then she stopped taking hydrochloric acid and the hemoglobin rise tapered off and reached a level. She was discharged and has been coming back to the laboratory regularly ever since. This is what we have found: When she took hydrochloric acid, 4 cc. three times a day with meals, and the amount of iron we mentioned, the hemoglobin rose. When she stopped taking hydrochloric acid, her hemoglobin went down even though she continued taking the same amount of iron. We counted her tablets, and she was very cooperative and very much interested in the experiment. When we put her back on the hydrochloric acid her hemoglobin increased again. We have done that three times. Here apparently is the one patient out of a hundred who has no bleeding and no hydrochloric acid, in whom we can vary the hemoglobin by an appreciable amount by just giving or withholding hydrochloric acid. I do not know if that is the whole story, but we are at least reasonably certain that there is no loss of blood in this case.

DR. TRAVELL: In what form is she taking the iron?

DR. REZNIKOFF: As ferrous gluconate. She was one of the patients who claimed that ferrous sulfate disagreed with her so we gave her ferrous gluconate and she seemed to tolerate it better, but we are not sure about this point.

DR. TRAVELL: As you have said, the experiments of Minot, and I think also those of Fowler and Barer, have shown that the administration of hydrochloric acid increased the effectiveness of ferric ammonium citrate when it was given in small doses but that it did not seem to increase the effectiveness of massive doses. I wonder whether the administration of hydrochloric acid might improve the absorption of ferric iron to a greater degree than that of ferrous iron.

DR. DU BOIS: Can you give us the limits of the dosage of iron in these rather severe anemias?

DR. RHOADS: No; I do not believe that is possible because there is such a tremendous variation in the amount of iron which will be effective in different individuals. We obtained therapeutic effects with small amounts of iron in certain individuals, and others were refractory to that amount. I myself feel—and I think I reflect Dr. Minot's opinion—that it is idle to speculate about the minimal dose of iron, since we know it to be variable. The important matter is to give enough iron to get the desired effect. The tolerance of course, varies. We gave 6 Gm. of iron and ammonium citrates daily, and that is enough to make some people fairly uncomfortable with diarrhea. In our experience, if various forms of iron are tried, one can always be found which the patient tolerates fairly well. It does not make very much difference in what form you give the iron if you give enough. There is a great deal of debate and I know you have considered the question here about the relative merits of ferric and ferrous iron. It seems to me that the discussion is academic, because you ought to be giving so much iron that the difference in valence would not alter the therapeutic effect. The same is true of hydrochloric acid, and the doses of iron should be large enough to be effective in the absence of gastric hydrochloric acid.

DR. MCKEEN CATTELL: I would be interested to know how much iron it takes to meet the requirements

for the amount of hemoglobin formed daily during the period of most rapid improvement. What does that represent in milligrams of iron?

DR. RHOADS: Almost all of a large dose is wasted, of course, but my impression is that as much as 10 mg. a day may be utilized for hemoglobin formation, and it is stated that as much as from 100 to 200 mg. may be retained.

DR. TRAVELL: In the iron balance studies reported from Iowa it was found that there is no correlation between the amount retained in the body and that utilized for hemoglobin synthesis.

DR. REZNIKOFF: The figures would depend on the degree of the anemia: If it is very severe, more iron will be retained.

DR. CATTELL: In any case, you give many times the amount of iron you expect to have utilized?

DR. RHOADS: Yes.

DR. DU BOIS: Do you ever resort to iron parenterally?

DR. RHOADS: We have not done so for two reasons: First, iron parenterally administered in really large amounts, hundreds of milligrams, is toxic. Iron in amounts which are tolerated without pain and without toxicity is not very effective. I think the trick in using iron is to be persistent in trying different preparations in order to find one that the patient can take in amounts adequate to give the maximum effect. Our experience has been that this problem of iron therapy is not very well handled by many practitioners. They much prefer to inject a preparation which they are told by the manufacturers is effective. It is usually not effective and is painful. They lose sight of the real point; that is of giving treatment to its full physiologic effect. The mere gesture of giving iron does not mean anything. The hemoglobin determination should be the guide to how much and what iron to give. We have had only one patient that we had to treat parenterally. In some cases, however, great patience has been required to discover the right preparation.

DR. DU BOIS: Will you tell us the sequence of iron preparations that you employ in endeavoring to get one that will be acceptable to the patient?

DR. RHOADS: We have used reduced iron for a long time. Often we gave as little as 100 mg. daily for several days, then stepped up the dose by 100 mg. each day until 1 Gm. three times a day was administered. An effective procedure is to start with small amounts of iron by mouth and increase them to the limit of tolerance. We instruct the patient to omit the iron for a day or two if he has abdominal cramps or loose stools. They soon learn what their tolerance is and can control their own dosage. We have used about the same plan with iron and ammonium citrates and with ferrous sulfate, which I think is as good an oral iron preparation as any. I have not had much experience with ferrous gluconate. The iron should be given with meals. When it is mixed up with other things in the stomach it is better tolerated.

SUMMARY

DR. DU BOIS: Dr. Gold, will you please summarize?

DR. GOLD: In the conference this morning we have had a discussion of the characteristics and the treatment of a common form of anemia which may occur under a variety of conditions but which in the vast majority of cases is due to chronic bleeding. The continuous drain on the hemoglobin of the body leads to microcytic anemia, in which the characteristic blood changes are reduction in the size of the red blood cell, with diminution in the amount and concentration of hemoglobin in the cell, i. e. microcytosis and hypochromia. Emphasis has been placed on the need for a thorough search for points of bleeding in patients presenting this form of anemia.

This is the type of anemia present in its characteristic form of hookworm disease, and its study in this disease has helped to establish relationships of great importance in the therapy of microcytic anemia. The various factors which promote iron deficiency are encountered in hookworm disease, namely low iron intake, frequently achlorhydria which diminishes the absorption of iron, diarrhea which increases the loss of iron, and the bleeding which drains the hemoglobin supplies.

The principal replacement that is necessary appears to be the iron. The body is capable of looking after the other components of the hemoglobin and the red cells. In experimental microcytic anemia it was shown that deficiency of iron limits not only the production of hemoglobin but also the production of red cells and that iron not only increased the size of the red cells but nearly doubled the rate of production of red cells.

In the previous conference we learned that in the normal man the iron in the diet needs but little attention because of the small requirements, the very small loss and the fact that even poor diets generally supply enough. In this form of anemia, however, the balance between intake and loss becomes a matter of prime practical importance. That the disorder is primarily an iron deficiency is seen from the fact that an adequate supply of iron will abolish the anemia. A large dose of iron may cure the anemia even while bleeding continues, although the first objective is, naturally, the control of the bleeding. Very large amounts of iron seem to be necessary, and diet alone will often fail to supply enough.

Especial emphasis was laid on the use of large doses of iron, such as 1 Gm. three times daily of reduced iron and similarly large doses of iron and ammonium citrates or ferrous sulfate. These doses give some idea of the margin, since only about 10 mg. of iron is utilized daily for the maximum hemoglobin regeneration.

The fact that hydrochloric acid promotes the absorption of iron and the possibility that ferrous iron is better absorbed than ferric iron become matters of little practical importance when such large doses of iron are administered.

References have been made to the value of the alcohol-insoluble fraction of liver, vitamin B_6, bile pigment and copper as factors which might be related to the problem of microcytic anemia, but evidence concerning the use of these factors in the treatment of this disease is not sufficient at the present time. The anti-pernicious anemia factor of liver is without value in microcytic anemia.

Parenteral iron administration is unnecessary, inconvenient, may cause painful irritation at the site of injection and in large doses is a source of danger from poisoning.

It seems to be necessary to have at one's command various preparations of iron because, while all of them may produce gastrointestinal disturbances, some patients are more tolerant to one than to another.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

DESOXYCORTICOSTERONE

THE COUNCIL HAS HAD UNDER CONSIDERATION FOR SOME TIME PREPARATIONS OF THE ADRENAL CORTEX. WHEN DESOXYCORTICOSTERONE WAS SYNTHESIZED AND MARKETED AS AN ACETATE FOR CLINICAL USE, IT WAS ANTICIPATED THAT MUCH OF THE INACCURACY AND UNRELIABILITY OF ADRENAL CORTEX THERAPY ASSOCIATED WITH THE USE OF EXTRACTS OF THE ADRENAL CORTEX GLAND WOULD BE ELIMINATED, SINCE THE ADMINISTRATION OF THIS POTENT STEROID ON A BASIS OF DOSAGE BY WEIGHT APPEARED TO OFFER ADVANTAGE OVER THE ADMINISTRATION OF ADRENAL CORTEX EXTRACTS, WHICH ARE RATHER UNSATISFACTORILY ASSAYED ON LABORATORY ANIMALS. THE EARLY REPORTS OF DRAMATIC CLINICAL SUCCESS IN THE TREATMENT OF ADDISON'S DISEASE WERE HELD MOST PROMISING.

SOON AFTER DESOXYCORTICOSTERONE ACETATE WAS EMPLOYED IN ADDISON'S DISEASE, THE COUNCIL LEARNED OF THE OCCURRENCE OF SIGNIFICANT UNTOWARD REACTIONS AND, IN SEVERAL CASES, ACTUAL FATALITIES. ONE OF THE MOST STRIKING EFFECTS OBTAINED WITH THIS SUBSTANCE WAS HYPERTENSION, WHICH IN SOME CASES RESULTED IN CARDIAC FAILURE AND DEATH. THERE HAS BEEN SUFFICIENT CONFIRMATION OF THESE RESULTS TO WARN AGAINST THE INDISCRIMINATE AND EXCESSIVE USE OF THIS SUBSTANCE IN ROUTINE THERAPY.

ADEQUATE EVIDENCE OF ANOTHER SORT HAS ALSO LED TO THE CONCLUSION THAT DESOXYCORTICOSTERONE ACETATE DOES NOT POSSESS ALL THE PROPERTIES OF THE ADRENAL CORTEX GLAND AND THAT THE SYNTHETIC PRINCIPLE, THEREFORE, DOES NOT FURNISH COMPLETE REPLACEMENT THERAPY.

IN VIEW OF THE POSSIBLE WIDESPREAD USE OF DESOXYCORTICOSTERONE ACETATE, THE COUNCIL REQUESTED DR. EDGAR S. GORDON TO PREPARE A REVIEW OF THE PHYSIOLOGIC AND CLINICAL DATA OBTAINED WITH THIS SUBSTANCE UP TO THE PRESENT TIME. THE COUNCIL EXPRESSES APPRECIATION TO DR. GORDON FOR PREPARING THE FOLLOWING STATEMENT AND HAS AUTHORIZED ITS PUBLICATION.

PAUL NICHOLAS LEECH, Secretary.

THE USE OF DESOXYCORTICOSTERONE AND ITS ESTERS IN THE TREATMENT OF ADDISON'S DISEASE

EDGAR S. GORDON, M.D.
MADISON, WIS.

The isolation and synthesis of desoxycorticosterone by Reichstein [1] and its successful application to the therapy of adrenal insufficiency by Thorn and his associates [2] have led naturally to the hope that this new synthetic preparation will bear the same relationship to the adrenal cortex and to Addison's disease that insulin has borne to the pancreas and to diabetes mellitus. The clinical studies of Cleghorn,[3] of Levy Simpson,[4] of Dryerre [5] and of Ferrebee, Ragan, Atchley and Loeb [6] have corroborated for the most part the therapeutic results of Thorn but have revealed, nevertheless, several complicating dangers in the use of this preparation which must necessarily receive further attention before desoxycorticosterone can safely be given unqualified endorsement for general use. Investigations by McCullagh,[7] by Thompson,[8] and by Rynearson [9] and Wilder [10] and their associates have likewise demonstrated serious difficulties arising out of the use of this synthetic sterol in human cases. Indeed there is now available an abundance of evidence derived from both clinical and animal experiments which makes it seem wise to exercise some caution in the widespread clinical use of this substance, at least until our knowledge concerning its mode of action is more complete. The present report is an attempt at evaluation of the current status of desoxycorticosterone and its esters in medicine.

EFFECT ON SODIUM, POTASSIUM AND WATER

Results from every laboratory uniformly show a powerful sodium and water retaining action of desoxycorticosterone. Thorn [11] has produced evidence to indicate that in bilaterally adrenalectomized dogs fed on a low sodium, high potassium diet, from 1 to 1.5 mg. daily of this material will maintain apparently normal health. Since the equivalent dosage of cortical extract was found to be from 6 to 8 cc. daily in divided doses, this means that on a rat assay basis 1.5 mg. of the pure sterol is equivalent to from 24 to 32 rat units. Waterman, Danby, Gaarenstroom, Spanhoff and Uyldert [12] have reported in experiments on dogs that 1 mg. of the pure substance is equal to from 20 to 30 cc. of adrenal cortex extract, and Levy Simpson gives a ratio of 1 mg. to 10 to 15 cc. of adrenal cortex extract in clinical cases.

Ferrebee and his associates [13] have found sodium and water retained at disproportionate rates in some human cases resulting in a rise or fall of serum sodium levels and in the appearance of massive edema under certain circumstances. In some instances, unusually rapid increases in plasma volume have led to pulmonary edema, cardiac failure and a dilution of plasma proteins of sufficient degree to accentuate even more the tissue retention of fluids. In almost every clinic in which desoxycorticosterone has been used extensively, one or more of these unfortunate accidents have occurred, and several fatalities have been reported.

Coincident with the sodium retention, the urinary excretion of that element falls sharply, as does also the urinary volume. Potassium excretion rises and the plasma potassium falls to normal or even subnormal levels.

EFFECT ON CLINICAL RESPONSE

Blood pressure values, both systolic and diastolic, are consistently elevated from their pretreatment hypotensive levels. This effect seems to show some tendency to lag behind the effect on mineral metabolism. In a considerable number of cases from several clinics this blood pressure change has progressed to definite hypertension with systolic pressures up to 180 and diastolic levels over 100. In none of these cases was there reason to believe that clinical hypertension had existed prior to the development of Addison's disease. This hypertension has been the source of great concern in those instances in which it has appeared, since a sudden elevation from a preexisting low level may well be respon-

From the Department of Medicine, University of Wisconsin Medical School.

1. Reichstein, T., and Euer, J. V.: Helvet. chim. acta **21**: 1197, 1938. Steiger, Marguerite, and Reichstein, T.: Partial Synthesis of Crystallized Compound with Biological Activity of Adrenal-Cortical Hormone, Nature, London **139**: 925 (May 29) 1937. Steiger, Marguerite, and Reichstein, T.: Helvet. chim. acta **20**: 1164, 1937.

2. Thorn, G. W.; Howard, R. P.; Emerson, Kendall, Jr., and Firor, W. M.: Treatment of Addison's Disease with Pellets of Crystalline Adrenal Cortical Hormone (Synthetic Desoxycorticosterone Acetate) Implanted Subcutaneously, Bull. Johns Hopkins Hosp. **64**: 339 (May) 1939. Thorn, G. W.; Howard, R. P., and Emerson, Kendall, Jr.: Treatment of Addison's Disease with Desoxycorticosterone Acetate, Synthetic Adrenal Cortical Hormone: A Preliminary Report, J. Clin. Investigation **18**: 449 (July) 1939.

3. Cleghorn, R. A.; Fowler, J. L. A., and Wenzel, J. S.: Treatment of Addison's Disease by Synthetic Adrenal Cortical Hormone (Desoxycorticosterone Acetate), Canad. M. A. J. **41**: 226 (Sept.) 1939.

4. Levy Simpson, S.: Use of Synthetic Desoxycorticosterone Acetate in Addison's Disease, Lancet **2**: 557 (Sept. 3) 1938.

5. Dryerre, H. W.: Effect of Desoxycorticosterone Acetate and Cortin on Salt Elimination in Addison's Disease, Brit. M. J. **1**: 971 (May 13) 1939.

6. Kuhlmann, Daniel; Ragan, Charles; Ferrebee, J. W.; Atchley, D. W., and Loeb, R. F.: Toxic Effects of Desoxycorticosterone (Esters in Dogs), Science **90**: 496 (Nov. 24) 1939. Ferrebee, Ragan, Atchley and Loeb.[13]

7. McCullagh, E. P.: Proc. Central. Soc. for Clin. Research, 1939, p. 18.

8. Thompson, W. O.; Thompson, Phebe K.; Taylor, S. G., and Hoffman, W. S.: Proc. Central. Soc. for Clin. Research, 1939, p. 19.

9. Rynearson, E. H.: Personal communication to the author.

10. Wilder, R. M.: Personal communication to the author.

11. Thorn, G. W., and Eisenberg, Harry: Studies on Desoxycorticosterone: Synthetic Adrenal Cortical Hormone, Endocrinology **25**: 39 (July) 1939.

12. Waterman, Danby, Gaarenstroom, Spanhoff and Uyldert: Acta brev. Neerland. **9**: 75, 1939.

13. Ferrebee, J. W.; Ragan, Charles; Atchley, D. W., and Loeb, R. F.: Desoxycorticosterone Esters: Certain Effects in the Treatment of Addison's Disease, J. A. M. A. **113**: 1725 (Nov. 4) 1939.

sible for cardiac and systemic manifestations, particularly when it is associated with a sharp increase in blood volume.

Some disagreement exists concerning the subjective benefits from desoxycorticosterone therapy. Many cases appear to show much improvement with almost complete disappearance of symptoms such as asthenia, nausea and vomiting, anorexia and weight loss, which regularly appear in the severe untreated disease. In certain other instances the improvement in symptomatology has not paralleled the response in electrolyte chemistry. This may be due, however, to the simultaneous appearance of some of the cardiovascular complications already mentioned. No effect has been noted on the degree or distribution of pigmentation.

EFFECT ON CARBOHYDRATE METABOLISM

Considerable doubt exists at present that desoxycorticosterone has any appreciable effect on carbohydrate metabolism. Ferrebee and his associates [13] found that fasting blood sugar levels were unchanged in human cases after prolonged continuous therapy. They likewise were unable to demonstrate any significant change in respiratory quotients in these cases. The experiences of Thompson, Rynearson, Wilder and others corroborate these observations so that there is now increasing substantiation for the general impression that, of all the cortical hormones which have been studied, this particular one has probably the least effect on carbohydrate metabolism.

Of particular importance in this regard are the investigations of Long and his associates,[14] who have thoroughly tested the diabetogenic action of various cortical fractions using adrenalectomized, partially depancreatized, animals. This preparation is known to be a sensitive indicator for changes in carbohydrate metabolism dependent on the adrenal cortex. Desoxycorticosterone showed almost no diabetogenic action under these conditions, in contrast to corticosterone, which showed a marked effect, as do also whole extracts of adrenal glands.

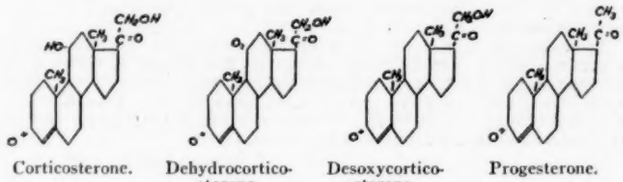
On the other hand, Britton and Corey [15] have recently reported that desoxycorticosterone maintains high liver and muscle glycogen as well as normal blood dextrose levels in adrenalectomized animals. They noted, however, in experiments on cats a diminished effectiveness on carbohydrate stores of the synthetic compound as compared to adrenal cortical extracts. Thorn, Koepf, Kuhlmann and Olsen [16] likewise demonstrated that desoxycorticosterone acetate restored the carbohydrate metabolism of adrenalectomized dogs to normal, except for increased sensitivity to insulin. It is interesting that Anderson and Herring [17] have shown that 1 per cent sodium chloride solution as drinking water maintains glycogen stores in adrenalectomized rats as effectively as does desoxycorticosterone acetate.

These conflicting reports make it seem likely that either there is a species difference in the response to cortical preparations, a possibility which appears rather improbable, or that certain differences in experimental procedure are responsible for the observed variations. It is quite possible that the amount of muscular activity of animals deprived of their adrenal glands, as well as the availability of food, is an important factor in the maintenance or destruction of carbohydrate stores. In any event, as far as experience with human cases is available, desoxycorticosterone appears definitely to represent only a part of the activity of the adrenal cortex and to be deficient particularly in the capacity possessed by that gland to regulate carbohydrate metabolism.

OTHER EFFECTS

Desoxycorticosterone has been shown to have a progestational effect by a number of investigators.[18] This action is not surprising in view of the chemical similarity of this compound to progesterone.

Whether or not it also has an estrogenic action is at present unsettled, since evidence has been presented on both sides of this question.[19] Hooker and Collins [20] have demonstrated an androgenic action which they believe to be about one thirtieth that of androsterone, resembling the action of the latter compound more closely than that of testosterone. Greene and Burrill,[21] on the other hand, were unable to find any evidence of androgenic activity in rats. There is no evidence from



Corticosterone. Dehydrocorticosterone. Desoxycorticosterone. Progesterone.

clinical studies that clarifies these divergent results. That there are substances in the adrenal cortex which have definite effects on the accessory sexual structures of both male and female animals is, however, well established.

COMMENT

Emerging from the mass of data now available concerning this substance, three facts now seem well established:

1. Of all the compounds that have been isolated from the adrenal cortex, desoxycorticosterone has the greatest action in conserving sodium and water and in causing the excretion of potassium.

2. Of all the compounds studied, it has the least demonstrable action in maintaining normal carbohydrate metabolism in adrenal insufficiency, amounting practically to no effect in clinical studies.

3. Given as the only form of replacement therapy in Addison's disease, it does not appear to provide complete substitution for the normal adrenal cortex.

Because of these considerations, it is highly probable that desoxycorticosterone does not represent the true hormone of the adrenal cortex but only one of the physiologically active sterols produced by that gland. This view is substantiated by the preponderance of available evidence, which seems to indicate that some additional factor or factors are needed to restore the metabolic processes to normal in adrenalectomized animals.

14. Long, C. N. H.; Katzin, B., and Fry, Edith G.: Adrenal Cortex and Carbohydrate Metabolism, Endocrinology **26**: 309 (Feb.) 1940.

15. Britton, S. W., and Corey, E. L.: Proc. Am. Physiol. Soc., 1940, p. 20.

16. Thorn, G. W.; Koepf, G. F.; Kuhlmann, Daniel, and Olsen, E. F.: Tr. Proc. Am. Physiol. Soc., 1940, p. 184.

17. Anderson, E., and Herring, V. V.: Effect of NaCl and Desoxycorticosterone on Body Weight and Carbohydrate Stores of Adrenalectomized Rats, Proc. Soc. Exper. Biol. & Med. **43**: 363 (Feb.) 1940.

18. Wells, J. A., and Greene, R. R.: Proc. Am. Physiol. Soc., 1939, p. 236. Robson, J. M.: Maintenance of Pregnancy in the Hypophysectomized Rabbit by the Administration of Estrin, J. Physiol. **95**: 83 (Feb. 14) 1939.

19. Salmon, U. J.: Desoxycorticosterone Acetate Is Estrogenic in the Human Female, Proc. Soc. Exper. Biol. & Med. **41**: 515 (June) 1939. Robson.[18]

20. Hooker, C. W., and Collins, V. J.: Androgenic Action of Desoxycorticosterone, Endocrinology **26**: 269 (Feb.) 1940.

21. Greene, R. R., and Burrill, M. W.: Lack of Demonstrable Androgenic Activity of Desoxycorticosterone Acetate, Proc. Soc. Exper. Biol. & Med. **43**: 382 (Feb.) 1940.

The deaths that have occurred incidental to the clinical use of desoxycorticosterone have probably been due for the most part to hypoglycemia. The additional complications of edema and hypertension have now been adequately controlled by means of reducing the intake of sodium salts to normal or even subnormal levels. Not only has it been found possible to allow normal quantities of potassium in the diet, but it has been found beneficial in some cases to administer extra potassium. Wilder and his associates believe that the dose of the hormone should not exceed 7 mg. (the interval between doses is not stated) and that the potassium intake should not be reduced below 4 Gm. daily. This potassium intake can be conveniently provided by means of a high protein diet. Sodium salts are given sparingly, not to exceed 5 Gm. daily in addition to that already contained in the food. By this means the therapeutic advantage of the synthetic hormone has been retained without the danger from the aforementioned complications. Thompson [22] uses doses up to 30 mg. daily, which however he finds to be inadequate when desoxycorticosterone is the only form of replacement therapy used.

The concept of a qualitative difference between cortical preparations, in addition to the well established quantitative variations, has been clearly presented by Kendall,[23] who has shown that marked differences exist between corticosterone, desoxycorticosterone and his "cortin fraction, which possesses 90 per cent of the activity of adrenal cortical extracts" in regard to their ability to maintain normal electrolyte balance, produce adrenal and thymus atrophy and maintain body weight in adrenalectomized animals. These differences observed can hardly be attributed to variations in rates of absorption or to other quantitative factors but seem rather to be true qualitative differences between the various fractions. The work of Long [14] adds important support to this theory.

If this hypothesis eventually proves to be correct it is not difficult to understand how desoxycorticosterone, particularly in excessive dosage, might cause a disproportionate effect on mineral balance and blood pressure, with a negligible effect on carbohydrate values. For this reason this synthetic preparation must be considered as a powerful physiologic regulator capable of producing manifestations of serious intoxication if given in excessive doses, in much the same manner that thyrotoxicosis can be produced by excessive administration of desiccated thyroid gland. The unfortunate clinical experiences which occurred during the early days of desoxycorticosterone therapy may reasonably be attributed to this fact, as suggested by Thorn. The persistent hypoglycemic levels in these treated patients would also be adequately explained. Since the chloride excretion test devised by Cutler, Power and Wilder [24] measures only the diminished ability to conserve sodium chloride, it seems not unreasonable to assume that certain types of adrenal insufficiency might exist which would show this abnormality to only a limited extent but which would be characterized rather by a predominant error in carbohydrate metabolism and therefore would escape identification by this diagnostic procedure.

In spite of the evidence cited, it must be emphasized that the theoretical existence of a multiple adrenal cortical hormone has not yet been proved and that the possibility still remains that desoxycorticosterone is actually one of the most important if not the most important compound produced by the gland. In partial support of this possibility is the evidence provided by Kendall [25] that the carbohydrate regulating power of the cortical hormone is to some extent mediated through the potassium atom, so that the sodium, potassium and carbohydrate effects are inseparably bound together. For that reason further refinement of the technic for controlling sodium and potassium balances with desoxycorticosterone might reveal a more effective carbohydrate regulating effect. At the present time, however, this would seem to be an unlikely possibility.

Since the preponderance of evidence at present points to some other substance or group of substances as the true adrenal cortical hormone, it is important to determine in which direction these investigations are leading. Corticosterone still remains a possibility, in spite of its relatively low potency in certain respects in the hands of some investigators. The "cortin fraction" of Kendall, which has not been crystallized, is extremely potent in most of the measurable functions of the adrenal cortex. It will be necessary to know a great deal more about the chemistry of this extract before a final appraisal of "cortin action" can be made. Furthermore, Grollman [26] has announced the preparation of a new compound from the cortex which has a higher potency than any heretofore obtained. Little about its chemistry has been reported to date. Until these matters have been settled, the entire question of the adrenal cortical hormone will be in an unsatisfactory and unsettled state. The known complications which may arise from the clinical use of desoxycorticosterone make its application to therapy a procedure involving some risk, except in the hands of clinicians provided with adequate facilities for identifying and controlling any difficult situations which may arise. Until many details of its action are more thoroughly understood, its use should probably be restricted.

22. Thompson, W. O.: Personal communication to the author.
23. Wells, B. B., and Kendall, E. C.: A Qualitative Difference in the Effect of Compounds Separated from the Adrenal Cortex on Distribution of Electrolytes and on Atrophy of the Adrenal and Thymus Glands of Rats, Proc. Staff Meet., Mayo Clin. **15**: 133 (Feb. 28) 1940.
24. Cutler, H. H.; Power, M. H., and Wilder, R. M.: Concentrations of Chloride, Sodium and Potassium in Urine and Blood: Their Diagnostic Significance in Adrenal Insufficiency, J. A. M. A. **111**: 117 (July 9) 1938.
25. Kendall, E. C.: Influence of Cortin, Insulin and Glucose on Metabolism of Potassium, Proc. Staff Meet., Mayo Clin. **13**: 519 (Aug. 17) 1938.
26. Grollman, Arthur: Comparative Activity of Desoxycorticosterone and Other Crystalline Derivatives and of Purified Extracts of Adrenal Cortex, J. Pharmacol. & Exper. Therap. **67**: 257 (Nov.) 1939.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

AMNIOTIN (See THE JOURNAL, March 2, 1940, p. 764).

The following dosage form has been accepted:

Amniotin in Oil, 5,000 International Units: Each cubic centimeter contains 5,000 international units of estrogenic substance.
Manufactured by E. R. Squibb & Sons, New Brunswick, N. J.

PROPADRINE HYDROCHLORIDE-SHARP & DOHME (See New and Nonofficial Remedies, 1940, p. 252).

The following dosage form has been accepted:

Elixir Propadrine Hydrochloride: Each fluidounce contains propadrine hydrochloride 2 grains in a menstruum composed of alcohol 16 per cent, glycerin, sucrose and water, flavored with oil sweet orange, fluidextract licorice, and oil ceylon cinnamon, and colored with carmoisin (certified) and caramel.

THIAMIN CHLORIDE (See New and Nonofficial Remedies, 1940, p. 528).

The following dosage form has been accepted:

White's Thiamin Chloride Tablets, 1 mg.
Prepared by White Laboratories, Inc., Newark, N. J.

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SATURDAY, JUNE 29, 1940

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of the federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need, for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

THE IMPORTANCE OF CLINICAL INVESTIGATION

In most universities and research institutes major emphasis has been placed in recent years on basic research, which is pursued without thought of immediate practical value to man or to society. Frequently research in the fundamental medical sciences of physiology, anatomy, chemistry, biology and pathology has been enveloped in an atmosphere of profound obscurity. The material studied and the reports are expressed in terminology or in intricate mathematical formulas which make comprehension difficult. So much emphasis has been placed, in fact, on the quality of research in the laboratory as compared with research in the clinic and at the bedside that many a clinician has hesitated to express his opinions or his conclusions in relationship to the diagnosis and treatment of disease without having first devoted some thought and consideration to research on frogs, rats, dogs, rabbits or guinea-pigs. The results obtained in studies made on animals in the laboratory are, of course, of utmost importance as a basis for the ultimate study, which must always be made with man.

In a recent address, Abraham Flexner [1] emphasized the usefulness of useless knowledge. The value of basic research as discipline certainly cannot be denied. Nevertheless, the research carefully planned and actually performed with patients in a well equipped hospital frequently offers immediate promise of benefit to mankind far exceeding such abstruse performances as are occasionally reported from the laboratories of the fundamental sciences. In his address, Mr. Flexner proclaimed that the spirit and policies which determine the course of research should be the fearless and unhampered search for truth, the unlimited cultivation of the natural curiosity of human beings within the field of science. These very words are in themselves an inspiration to the physician, who takes care of patients in the hospital and in the home, to cultivate to the utmost those fields of clinical research which are available to him.

Most laboratory scientists appreciate the easier methods of their task resulting from the ability to work with test tubes and animals. This is perhaps one reason why laboratory research is generally used by preference for fundamental investigations. Once the ground has been broken in this way, the problem can often be carried to the clinic with a much better chance of success and safety for the patient. Moreover, the methods of the laboratory must prevail in the clinic as well if clinical research is to be useful; even clinical research is most useful when it is carried on by exact methods and when the results are judged by a critical mind that rebels against superficial observations, unsound reasoning and uncritical deductions. Indeed, the clinical investigator often finds that the first approach to the problem which arises in the clinic must be made through the laboratory.

Thus there has been suggested as a typical example the work of Loeb in Addison's disease. He had been working for many years on the acid-base equivalent and the electrolyte structure of the blood. In taking care of patients with Addison's disease in the ward, the clinical condition in addisonian crises suggested to him the possibility of potassium poisoning. This led to investigation of the electrolyte pattern of these cases, which permitted the discovery of the altered potassium-sodium ratio with lowered sodium and increased potassium. This observation, in turn, suggested the use of sodium chloride in the treatment of addisonian crises. Both the experiments in the laboratory and those in

1. Flexner, Abraham: The Usefulness of Useless Knowledge, The Field and the Work of the Squibb Institute for Medical Research **1**: 19 (Nov.) 1938.

the clinic thus led to constructive progress in the treatment of Addison's disease and to new fields of experimentation in both the laboratory and the clinic in relationship to many other problems. From an idea gained in the clinic regarding disease, the modern investigator goes back to the organic chemist, suggesting the type of synthesis needed. The products which are developed are then tested experimentally in mice, dogs and other animals so that the investigator gains a thorough knowledge of the therapeutic and pharmacologic effects. Then it is possible to take the product back to the patient, where studies are made under controlled conditions of clinical investigation.

There would seem to be need for closer approximation between the fundamental sciences and the clinic; far too often fundamental workers in chemistry, bacteriology and physiology seem to be disinterested in the application of their problems to the clinic. In fact, far too frequently they use in their discussions terms which even the scientifically trained clinician finds it difficult to understand. As Eugene F. Du Bois [2] has said, "Any young neophyte can introduce a new drug. It requires a man of large experience and considerable reputation to destroy an old one." The clinical investigator must be a good diagnostician; a keen, impartial observer, capable of utilizing the relatively new methods of alternate cases and blindfold tests, and of enlisting the support of the pharmacologic laboratories.

In an address, also made at the dedication of the Squibb Institute for Medical Research, Dr. Russell M. Wilder [3] forcibly called attention to the need for more laboratories in which problems involving abnormal human physiology can be attacked by clinicians who have received training in investigation equivalent to that usually given to the physiologist or biochemist. He said:

> Medical science, in recent decades, has developed principally in laboratories of animal physiology, and in consequence what we have learned about dogs and rats exceeds what we know about ourselves. This is partly explained by the greater ease of experimentation on lower animals, but also responsible in part is the disproportionately larger provision made for research with animals. It is only in very recent years that American universities have admitted clinicians to their faculties, and in only a few universities where this has occurred is provision made for as rigid investigation of clinical material as the physiologist conducts with dogs.

Wilder emphasized that we must learn more from man than we do learn, because much of the information obtained from other animals fails to apply to man. Striking variation is found, for example, between human diabetes and the diabetes of dogs after pancreatectomy. A difference exists in the distribution of potassium between the cells and the plasma of the blood; explaining it may be the unlike response to treatment of patients with Addison's disease and adrenalectomized dogs. The dissimilarity of distribution of cholinergic and adrenergic nerve fibers accounts for the fact that sweating occurs in man and not in the dog and may underly species differences in susceptibility to toxins and drugs.

Research on man, however, demands even greater refinement of method, more critical judgment and more rigid control than does work with dogs or other animals. Wilder not only pleaded for scientific training of clinical investigators; he also urged that laboratories for clinical research be located when possible in hospitals which are integral parts of universities. In such environment the clinical investigator obtains guidance from laboratory workers on the one hand and criticism from clinicians on the other. He requires both—the former to hold him to the discipline of science, the latter to maintain the reliability of his clinical interpretations.

No doubt, a number of factors have been significant in developing the current relationship between laboratory and clinical research. An important influence is undoubtedly the great increase in the number of nonmedical investigators: doctors of philosophy in the basic sciences who are primarily responsible for teaching in the preclinical branches. Indeed, there are many institutions in which the teachers concerned with the study of the effects of drugs in health and in disease are doctors of philosophy and pharmacology who have in their own training been without any considerable contact with actual cases of disease. The recent introduction of special emphasis on statistical studies has decreased largely the influence of many a competent scientist who emerged from the university in a previous generation and who has not been able to keep abreast of this current trend. Such men, even as heads of departments, may develop a sense of inferiority in conversing with younger men who have been especially trained in the newer technics. Nevertheless, the great field for research in medicine is today still in the clinical branches. Unfortunately, much of the material which is published as part of the contents of many medical journals represents work done in a superficial manner without proper standards, and it is likely to be subject to harsh criticism from leaders in the fundamental sciences. All these observations lead, therefore, to the eventual conclusions that proper integration of the fundamental sciences in clinical medicine and, at the same time, independent investigation in the two fields represent the primary needs of the day. On the physician rests the obligation to establish through clinical investigation all the possible practical results based on investigation in the laboratory as soon as possible in order to benefit the sick. The physician cannot always afford to wait until the fundamental discoveries have been established beyond the shadow of doubt in the

2. Du Bois, Eugene F.: Elimination of Worthless Drugs, Tr. A. Am. Physicians **54**: 1-5, 1939.
3. Wilder, Russell M.: Industrial Laboratories and Clinical Research, The Field and the Work of the Squibb Institute for Medical Research **1**: 15 (Nov.) 1938.

laboratory. Indeed, this application of laboratory science to the bedside represents the highest type of clinical research and one which may inspire every practicing physician.

TRAINING OF PHYSICAL THERAPY TECHNICIANS

During the past fifteen years there has been a belated but gratifying growth in appreciation of the varied beneficial influences of physical therapy. Strange that one of the oldest therapeutic fields known to mankind should have waited so long to be recognized with other major factors of the medical armamentarium. As far as extension of physical therapy to the public is concerned, however, for rich and poor alike the surface has been hardly more than scratched.

In his recent address before the thirty-sixth Annual Congress on Medical Education and Licensure in Chicago, Gregg [1] remarked:

> A curious phenomenon in American medicine is the deft elimination of much reference to physical therapy. Almost as those who keep their children ignorant of the facts of life, we appear to protect the American medical student from the knowledge of physical therapy, mindful, I suppose, of the abuses imputed to osteopaths and chiropractors. . . . But the effects of heat on capillary circulation, lymph flow and inflammation, and the indications and effects of massage and passive movement or of irradiation, can certainly be learned and taught as physiology without any trace of charlatanry. The current unabashed ignorance of physical therapy in this country leaves it as an excellent opportunity for development in American medicine.

These remarks are a deserved exposé of a situation which lamentably needs correction. The cults owe their origin largely, if not entirely, to the inertia and apathy with which the medical profession has regarded physical therapy. Fortunately this situation is being slowly but definitely bettered by virtue of the educational campaign now under way. Physical therapy is included officially in the curriculums of some of the leading medical schools. It has received attention and some emphasis in many others. The field constitutes a definite specialty, however, and one of the difficulties as well as one of the opportunities is the necessity of training men in this field.

In many medical centers and in many smaller communities, physicians are gradually becoming aware of the importance of applying the various measures included under physical therapy to a host of conditions. Intellectual appreciation of the therapeutic potential in this field and actual practice of its precepts are, however, two different matters. Even if the general practitioner should be equipped to carry out skilfully the various measures of physical therapy, he could himself reach only a negligible fraction of those patients, both medical and surgical, who desperately need such care. This need can be met in a large way only by physical therapy technicians trained to use with skill and restraint those complicated measures which constitute the essential basis of physical therapy, namely heat, effleurage, massage, postural exercises, passive motion and active exercise. Fortunately the training of persons educationally qualified to enter this field, such as registered nurses or graduates in physical education, can be achieved in a relatively short time. Such qualifications do not supply that experience and skill which only time will yield, but at least they afford a direct and immediate avenue of approach to the application of physical measures. Indeed, the opportunity today for agreeable and remunerative effort, of great sociologic value, is such that young persons interested in activities within the field of medicine could well consider this vocation. Educational opportunities for training are, as indicated in a recent issue of THE JOURNAL,[2] as yet limited; but they are in process of being expanded and as the demand increases further expansion can be expected.

Direction of the activities of physical therapy technicians by qualified medical supervision is primarily important. Such qualified direction is available in only a few medical centers. Until this requirement has been filled, the medical profession and the public will be fortunate if the quota of technicians needed for a host of patients can be supplied.

The Council on Physical Therapy has often pointed out that the basis of the principles and practice of physical therapy consists in the application of heat, massage and exercise. It is still necessary to disabuse the medical mind from the thought that the field is constituted by physical apparatus. Except for refinement of application, relatively little that is new has been added, in principle, to physical therapy since the days of Hippocrates apart from the influence of the x-rays and radium. These agencies are by definition restricted to elaborate physical equipment directed by medical minds trained in these lines of effort.

Orthopedists have long since learned the value of physical therapy. Neurologists, following the lead of Weir Mitchell, now make use of this measure in a large way. Internists as a group and practitioners in general have small interest in the field and perhaps even less familiarity with it. Thousands of cases of fracture in or near joints and a vastly greater number of sufferers from arthritis are daily experiencing sharply limited motion and permanent ankylosis because of well intentioned ignorance and because of a dearth of personnel qualified to bring critically to bear even the simplest physical therapeutic measures. Precisely here many more persons adequately trained in the practice of physical therapy are needed. In respect to the more subtle practices in difficult cases the number of experienced persons is hopelessly inadequate.

1. Gregg, Alan: Addenda to the Agenda for the Decade 1940-1950, J. A. M. A. **114**:1139 (March 30) 1940.

2. Schools for Physical Therapy Technicians, J. A. M. A. **114**:1262 (March 30) 1940.

Current Comment

FOURTH OF JULY

Already the American Medical Association has circularized hospitals, dispensaries and other institutions in the United States with a view to compiling within the near future a record of accidents and mortality resulting from injuries on the Fourth of July due to ignorant or too enthusiastic employment of fireworks. Many states have already adopted effective antifireworks legislation; but last year at least 5,560 people were injured, and at least thirteen died as the result of such celebrations. The majority of cases were mutilations received by boys or men who used home-made explosives, and burns of little girls whose dresses were set on fire by sparklers and fire crackers. In 1938 Pennsylvania led all other states, with six deaths from fireworks. In 1939 the records indicated that there was not one death in that state. It is about time that every state in the Union adopted effective antifireworks legislation. The contrast, in recent years, between Pennsylvania, Utah and West Virginia, which adopted such legislation, with Indiana and Maryland, which postponed legislation, should be sufficient warning to every state that the time has come to cease postponing such action.

GOVERNOR LEHMAN ADDRESSES THE MEDICAL PROFESSION

At the opening general meeting of the American Medical Association convention in New York, Governor Herbert H. Lehman made an address which brought the assemblage to its feet in applause. The moment was fraught with anxiety because of the report on the status of the war in Europe. A great orchestra of physicians had inspired the assemblage with a beautiful performance. The invocation was sympathetic and at the same time thrilling. The Governor of New York recognized the achievements of scientific medicine on behalf of mankind in the twenty-three years since the Association had previously met in New York City:

"The continued progress of any people and of civilization in general," he said, "depends upon the well-being of individual members of society" and, he continued, "there can be no doubt that the availability and utilization of adequate medical facilities and the attainment of high standards of medical care throughout the nation has become an important public consideration. Only by constant, intensive and coordinated action by the medical profession as a whole can these great needs be met. The hospital, the practicing physician and the research laboratory," he said, "are in my opinion the most important instruments in the future improvement of the well-being of the people of this nation." Bitterly he attacked the totalitarian aggression, which now threatens not only life and property but all concepts of morality, religion and thought. "Such an attack," he said, "would destroy freedom, and without freedom science cannot exist." Continuing, he said "But in those countries where freedom has disappeared science too has been beaten to earth. There science is being used not to prove truths but to distort them. It is being used not to advance human thought but to shackle it. It is being used not to make men free but to enslave them. It is being used to tear down, to maim, to kill, not to save and build. . . . Yours is a great profession. It is great in part because it is free and untrammeled. It deals not only with the bodies but with the souls of men. The spiritual influence which you wield is as important as the purely medical. Medicine and surgery here and abroad have achieved epoch making gains on all fronts only because those who are dedicated to them could conduct and carry on their work with perfect freedom of thought and expression. . . . Science cannot possibly live and progress save in an atmosphere of complete intellectual honesty. Its very lifeblood springs from individual initiative. Its inspiration is high morality and spirituality. Science becomes impotent where freedom is lost."

The address ended with the Governor's hope that our government and our people would give all possible material help in the defense of freedom and the democratic cause. It was an address replete with re-expression of many of the ideals for which medicine has been doing its utmost throughout the years. When statesmen and leaders of our people realize that freedom of the medical profession to study and to advance are basic to every freedom of the nation, the battle for medicine will begin to be won.

DR. GEORGE WALTER McCOY RETIRES

Dr. George Walter McCoy, for forty years on active duty in the United States Public Health Service, will retire on June 30. His contributions to the investigation of tropical diseases, his enlightened administration of the Hygienic Laboratory from 1915 through 1937 and his services to the Council on Pharmacy and Chemistry of the American Medical Association from 1915 onward are exemplifications of the vast public service which he has rendered in the field of medicine. For some twenty years also he served the advancement of medical science notably by his contribution as a powerful opponent of measures introduced into Congress by those who endeavored to inhibit scientific research through preventing the use of animals. Dr. McCoy is now director of the Department of Preventive Medicine and Public Health at the Louisiana State University School of Medicine in New Orleans. He will continue his membership on the Council. Thus he now serves still further by his ability to inspire young men with the possibilities in the field of preventive medicine. THE JOURNAL wishes for Dr. McCoy many more years of healthful life and distinguished service.

THE DECISION TO OPERATE

Dr. S. S. Goldwater, Commissioner of Hospitals of the City of New York, reports that the surgical services in one of the institutions under his supervision have adopted a rule that "all operative cases of election, excluding emergency cases, must have a record of examination *by two members of the visiting staff* recommending the operation." Such a rule unquestionably provides an additional safeguard for patients about to undergo elective surgery, gives added protection to the public and also adds legal and moral support to the judgment of the attending physician. The patient, the physician and the institution would all seem to be benefited by this precautionary measure. Public hospitals especially might well consider the advisability of adopting a similar rule.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

COMMITTEE ON MEDICAL PREPAREDNESS

Dr. Irvin Abell, Louisville, Ky., Chairman
Dr. Charles A. Dukes, Oakland, Calif.
Dr. Roy W. Fouts, Omaha
Dr. Stanley H. Osborn, Hartford, Conn.
Dr. John H. O'Shea, Spokane, Wash.
Dr. James E. Paullin, Atlanta, Ga.
Dr. Walter G. Phippen, Salem, Mass.
Dr. Fred W. Rankin, Lexington, Ky.
Dr. Harvey B. Stone, Baltimore
Dr. Samuel E. Thompson, Kerryville, Texas

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Dr. Arthur W. Booth, Elmira, N. Y., Chairman Board of Trustees
Dr. Austin A. Hayden, Chicago, Secretary Board of Trustees
Dr. Nathan B. Van Etten, New York, President American Medical Association
Dr. Olin West, Chicago, Secretary American Medical Association
Dr. Morris Fishbein, Chicago, Editor Journal of the American Medical Association

AN APPEAL FOR SERVICE

In response to a request from the Surgeon Generals of the Army, Navy and Public Health Service the American Medical Association has set its machinery in motion to secure information relative to the availability and qualifications of professional personnel for service in the federal preparedness program. Since mental and physical health is of fundamental importance in the prosecution of such a program, the doctor, with a knowledge of the measures essential to the conservation of health, the prevention and cure of disease, is in a position to make a signal contribution to its success. The medical profession, actuated by a high sense of patriotism and civic responsibility, has freely proffered its help in every emergency with which the government has been confronted. The American Medical Association has always unfailingly placed its facilities at the disposal of the constituted authorities. During the first world war 32,000 of its members voluntarily served with the armed forces and many more thousands participated in various helpful capacities. Soon a letter and a schedule will reach you on which you may supply information necessary to enable our nation, in an emergency, to call on physicians for the services they are best equipped to render. The reply of the profession to this call for help will by its generosity and spontaneity demonstrate that medical men continue to be not unmindful of the obligations which intelligent citizenship entails and as well not only their willingness but their determination to fulfil them.

IRVIN ABELL, M.D.
Chairman Committee on Medical Preparedness.

ADDITIONAL PHYSICIANS REQUIRED FOR UNITED STATES NAVY MEDICAL CORPS

In an effort to bring up the strength of the Medical Corps of the Navy to that authorized by the Department of the Navy, an examination for entrance into the Medical Corps will be held on August 19. This examination will be held at the U. S. Naval Medical Center, Washington, D. C., and at the following naval hospitals:

Chelsea, Mass.; Brooklyn; Portsmouth, Va.; Pensacola, Fla.; San Diego, Calif.; Newport, R. I.; Philadelphia; Charleston, S. C.; Great Lakes, Ill.; Mare Island, Calif.; Puget Sound, Bremerton, Wash.

Graduates of class A medical schools who have had an internship in a civilian hospital and who are physically and professionally qualified may be commissioned in the permanent Medical Corps of the Navy as Assistant Surgeons with the rank of lieutenant (junior grade). Applicants must be less than 32 years of age at the time they receive their commissions, citizens of the United States, physically qualified for appointment as officers in the Medical Corps and must demonstrate their professional qualifications by competitive written, oral and practical examinations. The professional examination will embrace the subjects of (1) General Medicine, (2) General Surgery, (3) Obstetrics and Gynecology, and (4) Preventive Medicine and Medical Jurisprudence.

The pay and allowances for Assistant Surgeons with the rank of lieutenant (junior grade) in the Medical Corps of the Navy is $2,699 a year if the officer has no dependents and $3,158 a year if he has dependents.

Additional information regarding requirements may be obtained by addressing a letter to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. Applications must be completed and received in the Bureau of Medicine and Surgery prior to August 1 in order that authorization may reach the applicant in sufficient time for him to appear for examination on August 19.

BRITISH EMBASSY REGISTERING AMERICAN PHYSICIANS FOR SERVICE WITH GREAT BRITAIN

The British Embassy is registering the names of American physicians who volunteer for service in the United Kingdom in the treatment of war casualties so as to have available a list of men who may be called on if the need arises. The statement is made that these men are required mainly for the treatment of civilian casualties and that there is no question of enrolling these men in the medical services of the war forces.

ARMY MEDICAL CORPS NEEDS ADDITIONAL MEDICAL PERSONNEL

The office of the Surgeon General of the United States Army Medical Corps points out there are now authorized for the army of 280,000 an additional 1,283 Medical Reserve officers. Of this number only 363 have been procured, leaving 920 still required. Approximately 600 medical officers will be needed for the additional 95,000 men. It is stated that the War Department will authorize active duty for lieutenants to age 35 and captains to age 40. The duty will be for one year, to be renewed as required. Physicians who are anxious to obtain some military experience, and particularly young physicians who are seeking at this time an outlet for their services, will find here an opportunity to accept service for one year or for more if they desire it to obtain experience, and an income, and at the same time fulfil a patriotic duty.

ORGANIZATION SECTION

PROCEEDINGS OF THE NEW YORK SESSION

MINUTES OF THE NINETY-FIRST ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN NEW YORK, JUNE 10-14, 1940

HOUSE OF DELEGATES

Second Meeting—Tuesday Morning, June 11

The House of Delegates was called to order at 9:40 a. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Credentials

Dr. J. Newton Hunsberger, Chairman, reported that 168 delegates had registered and been seated.

Roll Call

On motion of Dr. Charles W. Roberts, Georgia, seconded by Dr. J. N. Baker, Alabama, and carried, the House dispensed with the roll call.

Presentation of Minutes

Dr. H. B. Everett, Tennessee, moved that the House dispense with the reading of the minutes. The motion was seconded by Dr. John Z. Brown, Utah, and carried.

Report of Reference Committee on Medical Education

Dr. Harvey B. Stone, Chairman, presented the following report, which, on motions duly seconded and carried, was adopted section by section and as a whole:

1. Resolution on Approval of the American Foundation for Tropical Medicine, Inc.; This resolution, which was introduced by Dr. Peter Irving, New York, was not supported at the hearings of your reference committee by any one sponsoring it or having detailed knowledge of the American Foundation for Tropical Medicine, Inc. In the absence of such information, your reference committee feels unable to give its endorsement to the resolution and suggests that it be laid on the table for future action.

2. Resolutions on Specialists in Hospitals: These resolutions, which were introduced by Dr. Thomas A. McGoldrick, New York, were so phrased that your reference committee was unable to get a clear idea of their intent. No sponsor for them appeared before the committee. Your reference committee, therefore, recommends that another opportunity be offered for the sponsors of these resolutions to appear before it in support of them.

3. Report and Supplementary Report of Council on Medical Education and Hospitals: (*a*) Your reference committee wishes to note a clerical error on page 176, line 12, of the Handbook in which 2.1 per cent appears in the printed copy and which, it is informed, should read 97.9 per cent. A further clerical error is noted on page 180, line 10, in which the word "extramural" should be inserted following "Scottish" and preceding "medical," so that the corrected portion of the text will read "the quality of instruction in the Scottish extramural medical schools." With these textual corrections, your reference committee recommends to the House of Delegates the approval of the report of the Council on Medical Education and Hospitals.

(*b*) Inasmuch as paragraph two of the report of the Council on Medical Education and Hospitals contains an implication of suggested action by the House of Delegates, your reference committee has suggested to that council that it submit to the House of Delegates a resolution embodying its ideas in this connection.

Respectfully submitted.

HARVEY B. STONE, Chairman.
ELBRIDGE J. BEST.
L. A. BUIE.
C. E. KIELY.
GEORGE BLUMER.

Report of Reference Committee on Hygiene and Public Health

Dr. Edwin S. Hamilton, Chairman, presented the following report:

Your reference committee held a hearing last night at which the proponents of resolutions referred to it were not present. Your reference committee is unable to take any definite action until the proponents of the resolutions come before it to explain the urgency of the resolutions, and it respectfully requests that the proponents of the resolutions appear at a meeting of your reference committee this afternoon immediately after the Executive Session. Unless they do come, your reference committee will have to report adversely on their resolutions.

Report of Reference Committee on Amendments to Constitution and By-Laws

Dr. David D. Scannell, Chairman, presented the following report:

1. Proposed Amendment to Article 8, Section 1, of the Constitution: Your Reference Committee on Amendments to the Constitution and By-Laws has read and approved the amendment submitted by the Judicial Council at the annual session held in St. Louis in 1939, which reads as follows:

Resolved, That the Constitution of the Association be amended by the insertion of the words "holding the title Doctor of Medicine or Bachelor of Medicine" between the words "associations" and "are" in article 8, section 1, third line.

This proposed amendment, having been submitted in 1939, is, under the provisions of the Constitution, before the House of Delegates for action at this New York session.

2. Proposed Amendment to By-Laws, Chapter VIII, Section 1: Your reference committee has heard Dr. James E. Paullin, Section on Practice of Medicine, with reference to an amendment to chapter VIII, section 1, of the By-Laws, dealing with the election of members of the Council on Medical Education and Hospitals and unanimously approves of this proposed amendment.

3. Report of Judicial Council: Your reference committee has read and approved the report of the Judicial Council with one exception. Under the heading of "Rearrangement and Rewording of the Principles of Medical Ethics" your reference committee dissents from the conclusion of the Judicial Council in this matter and recommends that the Speaker of this House appoint a committee of five to report its recommendations to the 1941 session of the House of Delegates of the American Medical Association in accordance with the resolutions introduced by the California delegation in 1939, reading as follows:

Resolved, That the Speaker of this House of Delegates appoint a committee of five Fellows of the American Medical Association to study the Principles of Medical Ethics and the form of the code of ethics of the

legal profession, having in mind the rearrangement of our Principles of Medical Ethics for continuity, the rewording for clarity, the addition of a commentary following each principle to illustrate the intent and the quoting of relating decisions of the Judicial Council; and be it further

Resolved, That this committee be directed to report its recommendations to the 1940 session of the House of Delegates of the American Medical Association.

Respectfully submitted.

DAVID D. SCANNELL, Chairman.
WILLIAM WESTON.
BARNEY J. HEIN.
CHARLES A. DUKES.
A. A. WALKER.

On motions of Dr. Scannell, duly seconded and carried, the House approved the first two sections of the report of the reference committee.

Dr. Scannell moved that the third section of the report of the reference committee, dealing with the report of the Judicial Council, be adopted, and the motion was seconded by Dr. George W. Kosmak, New York. After discussion, it was moved by Dr. A. T. McCormack, Kentucky, seconded by Dr. L. G. Christian, Michigan, and carried, that this third section of the report of the reference committee be tabled.

Dr. A. T. McCormack, Kentucky, then moved that the recommendation in the report of the Judicial Council referring to this matter be adopted, and the motion was seconded by Dr. Harvey F. Garrison, Mississippi, and carried.

The report of the reference committee, with the exception of the third section which had been tabled, was then adopted as a whole, on motion of Dr. Scannell, seconded by Dr. A. T. McCormack, Kentucky, and carried.

Article 8, section 1, of the Constitution was amended in accordance with the report of the reference committee, on motion of Dr. A. T. McCormack, Kentucky, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried.

On motion of Dr. Scannell, seconded by Dr. J. E. Paullin, Section on Practice of Medicine, and carried, chapter VIII, section 1, of the By-Laws was amended in accordance with the report of the reference committee.

Report of Reference Committee on Miscellaneous Business

Dr. Charles G. Strickland, Chairman, presented the following report, which was adopted section by section and as a whole on motions of Dr. Strickland, duly seconded and carried:

1. Resolutions on Military Service by Women Physicians: There was on Monday presented to this House of Delegates communications from the American Medical Women's Association and the Women's Medical Association of New York City, both containing a resolution of the same tenor, to wit, that the American Medical Association approach the War Department or proper authorities in order to secure military recognition and commissions for women physicians and surgeons in any defense plans.

Your reference committee takes pleasure in acknowledging the justice of the position taken in these resolutions and commends the public spirit which prompted them. It feels certain, however, that the War Department will utilize every available resource in its defense plans without regard to sex, color or creed. The Chairman of our Board of Trustees yesterday recommended the appointment of a committee to act as a coordinating committee on national defense activities. Your reference committee recommends that the communications and their contained resolutions be referred to that committee when formed for its information, consideration and action.

2. Resolutions on Care of Needy Physicians: Your reference committee feels that these resolutions, which had been presented by Dr. Charles A. Dukes, California, on instruction of the house of delegates of the California Medical Association, as written, have some objectionable features as (1) A serious study of the scope suggested will be time consuming. Unless other important work is neglected, it cannot be completed in time to report with recommendations to the 1941 House of Delegates. (2) The resolutions imply recognition of national responsibility, whereas your reference committee prefers to adhere to the principle that each state care for its own. (3) Resolutions of this type may eventually lead to unwarranted and perhaps embarrassing expenditure.

Your reference committee recommends that the resolutions be not approved.

3. Resolution on Blood Typing for Blood Transfusion: Your reference committee recognizes the value of blood transfusion and also the importance of having donors available for emergencies. It, however, believes that both doctors and the public are already well aware of the importance of the life saving procedure and that adequate measures have, in most communities, already been taken. It is unsympathetic with the idea expressed in the resolution that blood typing and classification "may be linked with the present day project of blood testing for syphilis." It regards this resolution, as introduced by Dr. T. K. Gruber, Michigan, in behalf of the Michigan State Medical Society, as unnecessary at the present time and so recommends its disapproval.

4. Resolutions on Limiting Type and Extent of Services Offered by Laboratories of State Boards of Health: In considering these resolutions, introduced by Dr. L. W. Larson, Section on Pathology and Physiology, your reference committee recognizes the encroachments on private practice as detailed in these resolutions and sympathizes with the attempts to correct or limit them as far as such attempts do not unwittingly interfere with the control of communicable disease. As your reference committee sees it, these resolutions contemplate no further action by the American Medical Association than the recommendation to all state societies as embodied and expressed in them. Your reference committee recommends approval of these resolutions.

5. Report of Board of Trustees dealing with the Report of the Bureau of Medical Economics on Fee Schedules: Your reference committee believes that this report fairly well summarizes a subject on which it is difficult, if not impossible, to come to common accord. Its feeling is the fewer the fee schedules, the better for all concerned. It calls attention to the fact that the third paragraph of the report, made up of a single sentence, is rather involved and must be read several times for clear understanding. Your reference committee recommends approval of the report.

6. Resolution on Doctor's Day: The hearing on this resolution brought out rather sharp differences of opinion between those gentlemen who were interested enough to appear before your reference committee. Senator Bilbo's resolution, as read yesterday, has passed the Senate but has not yet been considered by the House. The difference of opinion occasioned by the appreciatory resolution introduced by Dr. Harvey F. Garrison, Mississippi, was due to the fear that Senator Bilbo had not been specific enough in limiting his appreciation to doctors of medicine and that some of the cults might take over the day as their own. What the irregulars may do no one can predict, but Senator Bilbo, in his resolution and all through the six and one half page speech that he gave, made it perfectly clear that he sought to honor doctors of medicine only and particularly the family doctor.

Your reference committee recognizes the fact that your family doctor does not particularly crave nor desire this type of laudation. Senator Bilbo's action, however, was apparently spontaneous and not instigated by the Mississippi State Medical Association or by any other medical society. It merely remains for the House of Delegates to say "Thank you" for what was evidently meant as a gracious and friendly gesture or to pass over the action unheeded. Remembering the fact that we need to retain all the friends we have in Washington, your reference committee recommends for your approval the resolution offered by Dr. Garrison.

Respectfully submitted.

CHARLES G. STRICKLAND, Chairman.
HOWARD L. SNYDER.
HENRY C. MACATEE.
FREDERIC E. SONDERN.
HERBERT L. BRYANS.

Report of Committee on Legislative Activities

Dr. E. H. Cary, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

Mr. Speaker and Members of the House of Delegates:

The Committee on Legislative Activities reports that many months before the American Medical Association session in St. Louis, May 15-19, 1939, it was called to Chicago and decided on the best method of meeting the issues which would arise regarding legislation affecting the medical profession.

A plan was drawn and, with the cooperation of the members of the Board of Trustees, a number of gentlemen were selected to handle some phase of the program formulated. To each of the gentlemen was assigned a subject and he was asked to submit what he would present to a congressional committee. The response was immediate and the chairman of your committee had in hand their views when the American Medical Association met in St. Louis. At the St. Louis session a special committee was appointed by the Speaker to deal with the Wagner bill and that committee made a report which was unanimously accepted by the House of Delegates.

Following the St. Louis session of the American Medical Association, on May 25 the following gentlemen, who had been formerly asked to cooperate with our committee, were requested to come to Washington, where a full discussion was had: Drs. Frederic E. Sondern, Wingate M. Johnson, Robert L. Benson, James Milton Robb, Walter Edward Vest, Charles Gordon Heyd, R. L. Sensenich, Walter F. Donaldson, Haven Emerson and Holman Taylor. This group was joined by Drs. Olin West, Morris Fishbein, William C. Woodward, R. G. Leland, W. D. Cutter, F. S. Crockett and Edward H. Cary. We were able to agree on just what would be presented to the subcommittee of the Senate Committee on Education and Labor.

Your committee calls attention to the fact that the presentation of this material to the subcommittee of the committee of the Senate undoubtedly developed a favorable impression in Washington. Regardless of how the subcommittee utilized the material in its report there was a definite reaction through congressional halls.

Your committee has not been as active in opposing the new hospitals built for veterans, for the demands have been but a part of a general program of expansion. Regardless of whether many of them seem necessary to us, their geographic locations seem to be in line with a policy which has prevailed for the past few years.

Your committee would like to call to the attention of the medical profession that it has always been said that in a few years these hospitals would be used for domiciliary purposes. Your committee would like to suggest to the profession that, since we have not definitely destroyed the propaganda or the sentiment held in some quarters in favor of state medicine, these numerous hospitals may later offer an opportunity for exploitation in this field.

At the St. Louis session your committee stated that the Veterans' Administration in a report submitted to Congress on Jan. 30, 1939, showed that, of the 50,670 veterans under treatment at the end of 1938, 47,285 were in facilities controlled by the Veterans' Administration, 2,512 in other government hospitals and 873 in state or civil institutions.

Dr. Charles M. Griffith, medical director of the Veterans' Administration, reports as of the end of the fiscal year June 30, 1939, that they had hospital facilities in eighty-four locations in forty-five states and the District of Columbia. These had a capacity of 54,779 beds. There were, too, 16,345 beds set aside for domiciliary care in facilities under the jurisdiction of the Veterans' Administration, making a total of 71,124 beds controlled by the Administration. In addition, the Administration utilized 2,748 beds in other government hospitals.

In addition to this there is construction work in progress on forty-five major projects to provide 9,710 additional beds, some of these projects being new buildings and others being alterations and extensions.

There are 1,630 full time physicians and 4,267 nurses on duty in these field stations.

Your committee calls your attention to a notable variation in the distribution of cases in the last sixteen years:

	June 30, 1923	June 30, 1939
Neuropsychiatric	39%	57.68%
General medical and surgical	20%	33.12%
Tuberculous type	41%	9.20%

Dr. Griffith states that the Veterans' Administration requires that a veteran in order to be accepted for hospital treatment of a disease or injury incurred or aggravated in military or naval service must have an honorable discharge. If the applicant has had only service in peace time, he must have been discharged for disability in line of duty or be receiving pension for service-connected disability. For hospital treatment of a condition not attributable to military or naval service, the applicant must meet various requirements: length of service, character of discharge, type of disability and economic status. All of this leaves the impression that, while any veteran can be treated in the Veterans' Hospitals, there are certain difficulties which he has to overcome if his eligibility is not clearly shown.

Last year your committee made a report regarding the activities of the Farm Security Administration. It feels that it should bring to your attention some abridged statements of the Chief Medical Officer, Dr. R. C. Williams, and a digest of some of the rules and regulations under which the Farm Security Administration is operating.

Dr. Williams claims that, before any medical care plan is established in a state, an understanding is worked out with the state medical association and then agreements are worked out with the local medical societies. These agreements recognize three basic principles: (1) fee for borrower families determined by ability to pay as indicated by their farm plan; (2) free choice of participating physicians, and (3) funds set aside at beginning of the operating period in charge of a bonded trustee. The benefits included are (1) ordinary medical care (examination, diagnosis and treatment), (2) obstetric, (3) ordinary drugs, (4) emergency surgery as determined by the physician in charge, (5) emergency hospitalization and (6) many counties are adding dental service.

Families under typical agreement usually put into a pool from $15 to $30 annually. This varies according to benefits, size of average farm income in locality and the size of the family. A typical payment schedule for a low income county would be $18 for a man and his wife, plus $1 for each child. Any cooperating physician submits to trustees a monthly statement for services given to a member of the plan. These monthly bills are reviewed by a committee of physicians from the local society and each physician's pro rata share is determined if bills exceed the amount available. Bills are paid in full if there are sufficient funds. Dr. Williams stated that payments to physicians average 64 per cent of bills presented, which is said to be a higher percentage than they receive from ordinary practice among low-income farm families. The local committee which reviews the statements makes adjustments when necessary, thereby limiting misunderstanding. A county supervisor acts in a like capacity in checking on demands of families for service. In case a family is abusing the program, satisfactory adjustments can usually be made; otherwise the family is dropped from the program.

This pool plan is practical for physician and patient. The physician is available when protracted illness develops and when the family under ordinary circumstances could not afford to pay. It also distributes individual cost of medical care over many families, so that cost of severe illness to one family can be more nearly equalized. The heart of the program lies in a clear understanding by physicians and families as to what may be expected under this procedure as well as its limitations. It is a special plan for an underprivileged group of farm people. The program for medical care of the Farm Security Administration would have to have considerable modifications and changes if transferred to any other segment of the population.

One of our committee, Dr. F. S. Crockett, has been in touch for several years with the Associated Women of the American Farm Bureau Federation and the progress made has previously been reported to this House. During the past year a committee of the Indiana Farm Bureau has been appointed to study all

phases of a cash indemnity medical care plan suited to the needs of rural communities. It seems now that the desire for medical cooperation has lessened, no doubt owing to an improved economic situation.

In reference to the President's hospital construction program, at his invitation a conference was held with him on Jan. 10, 1940, to discuss his suggestions relative to hospital construction for certain depressed areas in this country. Dr. Abell's committee, including Drs. Walter F. Donaldson, Walter E. Vest, Frederic E. Sondern, Fred W. Rankin, E. H. Cary and Henry A. Luce, who unfortunately could not attend because of illness, along with Drs. West, Hayden, Leland, Cutter and representatives of the American, Protestant and Catholic Hospital Associations were present at this conference. The President made known to the group that he would have a bill drawn to construct fifty hospitals throughout the country where it could be shown that they were needed and that the people would maintain them. He also made it clear at that conference that there would be provided no subsidies for maintenance.

Since that meeting the Wagner-George bill has been introduced into the Senate. A companion bill was introduced in the House by Congressman Lea of California. At the hearing of the subcommittee of the Senate Committee on Education and Labor appeared Drs. West, Fishbein, Leland and Cutter.

Subsequently the Taft Hospital Construction plan submitted in the Senate was an interpretation largely of the attitude of the profession and, it is understood, the Wagner-George bill was redrawn utilizing several features of the Taft Amendment, but as it passed the Senate May 30 it contains some points with which the medical profession does not agree and to which its attention should be directed: 1. Definition of the term hospital in the bill should be modified to exclude health, diagnostic and treatment centers. 2. All projects to be constructed under the bill should be subject to the approval of the contemplated National Advisory Hospital Council. 3. Reference to osteopathic representation on the proposed council should be eliminated. 4. The method of selecting members of the proposed council should be given further consideration.

It is needless to say that the invasion of Norway and the military events which have occurred since this invasion have changed the situation so much that it remains to be seen whether the enactment of legislation affecting medicine will pass the present Congress.

Your committee in closing wishes to express its deep sense of loss in the death of one of its original members. Dr. C. B. Wright was intelligent and honest, faithful to his ideals, frank in expressing his judgment but at all times cooperating with his conferees for the best interest of the medical profession.

Respectfully submitted.

E. H. CARY, Chairman.
F. S. CROCKETT.
R. L. SENSENICH.
J. H. J. UPHAM.

Report of Reference Committee on Rules and Order of Business

Dr. John H. O'Shea, Chairman, presented the following report, which was adopted on motion of Dr. O'Shea, seconded by Dr. H. B. Everett, Tennessee, and carried:

Your reference committee recommends that the Executive Session of this House of Delegates be held at 2 p. m. on Tuesday, June 11. It further recommends that the House be constituted of and the attendance limited to the following: officers of the Association, members of the House of Delegates, alternate members of the House of Delegates, presidents and secretaries of constituent state associations, executive secretaries of constituent state associations, the Surgeon Generals of the United States Army, the United States Navy and the United States Public Health Service and such others as the House of Delegates may by motion admit.

Respectfully submitted.

JOHN H. O'SHEA, Chairman.
W. D. JOHNSON.
E. F. CODY.
H. S. READ.
E. H. SKINNER.

Report on Change in Name and Policy of the Council on Foods

Dr. James S. McLester, Chairman of the Council on Foods, presented the following statement, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

The Board of Trustees has acted favorably on the request of the Council on Foods that its name be changed to the Council on Foods and Nutrition. May I tell you briefly of a change in scope which has made advisable this change in name?

The original aim of the Council on Foods, in brief, was to promote accuracy in labeling and truthfulness in the advertising of foods. Its efforts have met with gratifying success. Manufacturers in overwhelming numbers have shown hearty cooperation, and the public has come universally to look on its seal of acceptance as an evidence of genuine merit. The success of this work, however, has made necessary a restriction in scope; the classes of food to be considered must definitely be curtailed.

This change has been accelerated by two trends: First, the Federal Food and Drug Administration has assumed the function of fixing standards and of defining foods and has stipulated that the ingredients of processed foods must be declared on the label, which makes unnecessary much of the work in which the Council originally pioneered. The Council does not, however, propose to retire from this field—far from it—but in order to avoid duplication of effort and possible conflict of authority it wishes to restrict its consideration of foods largely to the study of individual products intended for the feeding of infants, of special foods for the sick and of foods which, with a view to improving their nutritive value, have been manipulated by the addition of vitamins, minerals or other dietary essentials. This part of the work should be continued.

The second trend is seen in the epoch-making advances which are being made in the science of nutrition. Great discoveries are coming so rapidly that the public, and even the medical profession, is at times a bit bewildered. As a result, the Council finds itself exercising an important function not exercised by any other competent organization—that of assembling information and expressing authoritative opinion in the field of nutrition. It has published numerous special articles, singly and in series, with the object of clarifying this newer knowledge of nutrition and of presenting it in concrete form. It has been accorded a certain leadership and it wishes to meet this in a manner befitting a council of the American Medical Association.

With your approval, therefore, and with that of the Board of Trustees, the Council would like, while restricting its scope in one field, that of food products, greatly to broaden its work in another, that of nutrition, and accordingly to change its name to the Council on Foods and Nutrition.

Report of Reference Committee on Legislation and Public Relations

Dr. F. S. Crockett, Chairman, presented the following report, which was adopted, after discussion, section by section and as a whole, on motions of Dr. Crockett, duly seconded and carried:

1. Resolution on Military Status of and Pay to Physical Therapy Technicians: Your reference committee recommends that the Resolution on Military Status of and Pay to Physical Therapy Technicians, which had been introduced by Dr. Rollo K. Packard, Illinois, be referred to the Council on Physical Therapy for its consideration.

2. Resolution on Legislation Having to Do With the Care of the Sick: Your reference committee recommends that this resolution, introduced by Dr. John Z. Brown, Utah, be not adopted.

Your reference committee approves in principle any effort improving medical care of the indigent, but it wishes to call the attention of the House to the report of the Reference Committee on Consideration of the Wagner National Health Bill as reported at the St. Louis session last year, section 15, reading as follows: "The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the

indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service."

3. Resolution on Heroin: With reference to the resolution submitted by Dr. A. A. Herold, Louisiana, and published in the Secretary's Report, your reference committee has consulted the Bureau of Legal Medicine and Legislation and finds that a similar resolution was considered by the House of Delegates in 1927, which was referred to the Board of Trustees with a request that the Council on Pharmacy and Chemistry in conjunction with the Section on Practice of Medicine and the Section on Pharmacology and Therapeutics secure a reinvestigation of the use of heroin in the practice of medicine. In 1928 the following report was made to the House of Delegates: "This matter was referred to the Council on Pharmacy and Chemistry and that Council has submitted a report to the Board of Trustees to the effect that heroin is not considered to be therapeutically indispensable and that the Council on Pharmacy and Chemistry renews its approval of the provisions of the law prohibiting the importation of opium for the manufacture of heroin."

In view of the resolution showing renewed interest on the part of the profession, your reference committee recommends that the Board of Trustees be again requested to have the Council on Pharmacy and Chemistry review the needs for the use of heroin as a therapeutic agent.

4. Resolution on Medical Service Plans: Your reference committee recommends the approval by the House of Delegates of the resolution presented by Dr. L. G. Christian, Michigan, relative to the coordination of medical service plans. It recommends that the Board of Trustees be requested to direct the Bureau of Medical Economics to collect experience data and other pertinent information concerning prepayment medical care arrangements in order that sound practices may be developed and maintained, and to take steps looking to the coordination of medical service plans. Your reference committee also recommends that the House of Delegates reaffirm the principles pertaining to medical service plans previously adopted and urges the acceptance and application by all medical societies of the principles that prepayment group medical arrangements shall be controlled by the medical profession and that medical services be excluded from all group hospitalization plans but that, if the inclusion of special medical services are deemed necessary, the cost of such services be paid for in cash by the group hospitalization corporation directly to the insured persons.

Your reference committee suggests the importance of complete and accurate data in order that the intent of the resolution may be realized. It is recommended, therefore, that the constituent state medical associations of the states in which medical care plans are now operating or in which such plans may be formed undertake to secure the full cooperation of such medical care organizations with the Bureau of Medical Economics.

Respectfully submitted.

F. S. CROCKETT, Chairman.
CHARLES J. WHALEN.
L. G. CHRISTIAN.
WINGATE M. JOHNSON.
THOMAS A. MCGOLDRICK.

Report of Reference Committee on Sections and Section Work

Dr. Stanley H. Osborn, Chairman, presented the following report:

1. Section on Anesthesiology: Your Reference Committee on Sections and Section Work has carefully considered the content of the report of the Council on Scientific Assembly and concurs in that portion of the report which recommends the establishment of a Section on Anesthesiology. It has been evident for several years that the physicians interested in this specialty have needed a place to discuss their scientific papers. Your reference committee feels that the formation of such a section will fill a pressing need for the anesthetists and others who have an allied interest and recommends the establishment of such a section.

2. Section on Experimental Medicine: Your reference committee has carefully gone into the matter of the suggestion of the formation of a Section on Experimental Medicine. It feels that the proposed union of the Section on Pathology and Physiology and the Section on Pharmacology and Therapeutics into a Section on Experimental Medicine would be of considerable value to these sections and bring to the new section discussion on the new fields of research in medicine. Your reference committee suggests that the Council on Scientific Assembly continue its efforts in consideration of the feasibility of combining the two sections and forming a Section on Experimental Medicine.

3. Scientific Assembly: Your reference committee has noted in the scientific program a trend toward bringing before the membership of the Association the leaders in discoveries and new developments in different branches of medicine and commends the manner in which the Council has presented these selected subjects before the members in the General Scientific Meetings particularly and has sponsored the holding of combined section meetings when subjects were of ancillary interest.

Respectfully submitted.

STANLEY H. OSBORN, Chairman.
GEORGE G. WARD.
THOMAS F. THORNTON.
SAMUEL P. MENGEL.
JOSEPH F. SMITH.

The first section of the report of the reference committee, approving the establishment of a new section to be called the Section on Anesthesiology, was adopted on motion of Dr. Osborn, seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried.

On motion of Dr. A. T. McCormack, Kentucky, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, this action of the House recommending the establishment of a Section on Anesthesiology was referred to the Reference Committee on Amendments to the Constitution and By-Laws for presentation of the necessary amendment to the By-Laws.

On motions of Dr. Osborn, duly seconded and carried, the second and third sections of the report of the reference committee, as well as the report of the reference committee as a whole, were adopted.

NEW BUSINESS

Resolution Approving American Museum of Health and Urging Support of Similar Museums in Other Parts of the United States

Dr. A. T. McCormack, Kentucky, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The education of the public in matters concerning medicine and the prevention of disease is of the utmost national importance in a democracy which is dedicated to the conservation and enrichment of life; and

WHEREAS, The American Museum of Health has demonstrated at the New York World's Fair that an exhibit which is scientifically authentic and dramatically presented is an effective instrument in health education; and

WHEREAS, The present administration of the city of New York under the direction of Mayor Fiorello H. La Guardia has given evidence of its broad vision in assuming the permanent establishment of this museum as part of the health program of the city of New York; therefore, be it

Resolved, That the American Medical Association at its ninety-first annual session, held in New York, approves of this museum, urges its constituent and component societies to support and promote the development of similar museums in other parts of the United States and instructs its Board of Trustees, officers and employees to give all possible support to such museums wherever they may be developed in the United States in conjunction with local medical organizations.

Resolutions on Protection of Practices of Physicians Who Might Be Called to Military Service

Dr. Carrington Williams, Virginia, presented resolutions dealing with the protection of the practices of physicians who might be called to military service, which were referred without reading to the Reference Committee on Executive Session.

Attendance at Executive Session

On motions duly made, seconded and carried, attendance at the Executive Session was granted, in addition to those indicated in the Report of the Reference Committee on Rules and Order of Business adopted by the House this morning, to full time executive secretaries of component county medical societies; Dr. W. A. Howard, past president of the Oklahoma State Medical Association; members of councils of constituent state medical

associations, and officers of component county and constituent state societies who may wish to attend.

The House recessed at 11:30 a. m., to reconvene in Executive Session at 2 p. m.

Tuesday Afternoon, June 11

The House of Delegates was called to order by the Speaker at 1:45 p. m. to hear new and unfinished business before going into executive session.

Proposed Amendment to By-Laws

Dr. J. E. Paullin, Section on Practice of Medicine, presented an amendment to chapter XV, section 1, of the By-Laws, changing number 16 to number 17 and inserting "16. Anesthesiology" after "15. Radiology," so that section 1 of chapter XV of the By-Laws shall read:

SECTION 1. Titles of Sections of Scientific Assembly.—The Scientific Assembly of the American Medical Association shall be divided into the following sections:

1. Practice of Medicine.
2. Surgery, General and Abdominal.
3. Obstetrics and Gynecology.
4. Ophthalmology.
5. Laryngology, Otology and Rhinology.
6. Pediatrics.
7. Pharmacology and Therapeutics.
8. Pathology and Physiology.
9. Nervous and Mental Diseases.
10. Dermatology and Syphilology.
11. Preventive and Industrial Medicine and Public Health.
12. Urology.
13. Orthopedic Surgery.
14. Gastro-Enterology and Proctology.
15. Radiology.
16. Anesthesiology.
17. Miscellaneous Topics. (As amended, 1932, 1937, 1940.)

This proposed amendment was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Report of Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following supplementary report of the Judicial Council, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

1. Principles of Medical Ethics Pertaining to Patents and Perquisites: In its primary annual report this year the Judicial Council in its consideration of the subject of patents stated: "The Judicial Council has given extended consideration as to how to maintain the principle of benefit to humanity as the prime consideration in our Principles of Medical Ethics and at the same time to satisfy the reasonable demand that a physician, having given time and money for the benefit of humanity, shall be permitted to protect himself against exploitation by others and to receive reimbursement for his expenditure." The Council is now obliged to admit its failure to find a solution.

Its study developed certain patentable features not now included but which should be, and it believes the wording of the section can be improved. The Council therefore recommends that The Principles of Medical Ethics, chapter III, article 1, section 5, be amended to read "It is unprofessional to receive remuneration from patents or copyrights on surgical instruments, appliances, medicines, foods, methods or procedures. It is equally unprofessional, by ownership or control of patents or copyrights, either to retard or to inhibit research or to restrict the benefit to patients or to the public to be derived therefrom. It is unprofessional to accept rebates on prescriptions or appliances, or perquisites from attendants who aid in the care of patients."

2. Membership in the American Medical Association: As stated in the report of the Secretary and also in the report of the Judicial Council, there are divergences of qualifications for membership in component county and constituent state associations which operate to advantage in representation in this House of Delegates in favor of those state associations whose qualifications for membership in their component county societies are broad and inclusive as against those state associations that are more restrictive. Some component county societies admit osteopaths as such, others admit osteopaths who are licensed by the state to practice medicine and still others deny membership to any osteopath. Some societies require licensure by the state to practice medicine, while others do not. The members of the American Medical Association are the members of the component county medical societies whose names are certified to the American Medical Association by the constituent state medical associations.

The component county medical societies have various classifications of members. The Judicial Council knows of at least eight; viz., regular, active, associate, affiliate, honorary, retired, intern and nonresident. Some constituent state associations report only regular or active members, some include other classes and at least one reports all classes of membership in the component county societies for membership in the American Medical Association.

Such a wide diversity of qualifications for admittance to the component county medical societies, such a variety of classification of membership and such irregularity of reporting to the American Medical Association can hardly avoid violation of the democratic principle of equal representation and opportunity for all.

The American Medical Association has no power of compulsion to require any component county medical society or constituent state medical association to do in respect to its membership anything the county or state organizations decline to do on request. It can govern only its own membership, but compulsion should not be needed. In the interest of all, the constituent associations should be capable of and willing to bring about uniformity out of the present chaotic situation.

In its study and review of membership in organized medicine the Judicial Council has noted the diversity of activities which have claimed the training and knowledge of the medical graduate and have been absorbing him rapidly from the field of his primary object in obtaining that education and knowledge—the care of the sick. That primary object still activates the majority of medical graduates but greater and greater numbers of them are being attracted and absorbed into industry, teaching, research and other activities removed from medical practice and its sympathies and ideals. They live in a different world. Some belong to organized medicine, many do not. The question arises as to whether they should be in an organization such as ours or whether they belong in organizations in the line of their activities. Almost one hundred years ago, when the American Medical Association was formed, with few exceptions a doctor was a doctor whose only interest in life was the care of suffering humanity. That condition remained for many years and our organization has grown in number along with the population. But times have changed and many graduates in medicine have found interest and occupation in fields some of which are far removed from the needs, purposes and ideals which created this organization and produced its astounding growth in members and in service to humanity. The question arises: Are we growing out of our real reason for existence—the benefit of humanity—into something else? The Council believes that the evidence, slight as it may be, is sufficient to sound a note of warning. Thought should be given as to whether the time has come when we should restrict membership in this body to those physicians interested enough in the science of medicine and its practice to have taken at some time the trouble to become licensed to practice medicine. The Judicial Council recommends that only Doctors of Medicine *licensed* to practice medicine and whose licenses are registered in the county or state in which they make application be accepted for full membership in the American Medical Association.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.

Report of Reference Committee on Reports of Officers

Dr. Walter E. Vest, Chairman, presented a report which was amended to read as follows:

ADDRESS OF THE SPEAKER

1. Your reference committee would stress especially the point advanced by the Speaker that scientific achievement, unless based

on sound ethical principles and balanced by moral character in its proponents, may be far more destructive than constructive and that the greatness of the organized medical profession consists in its exemplification of these principles in its aims, endeavors and achievements.

Your reference committee would stress also the point made by the Speaker that the American Medical Association is a true democracy in that it is the only medical organization including all segments of the profession, it promotes freedom for all, including both profession and laity, and its House of Delegates affords an open forum to which all questions touching on health and medicine may be brought for discussion and decision.

ADDRESS OF PRESIDENT

2. Your reference committee would especially commend the suggestion of the President of the American Medical Association that further effort be made in educating the profession generally as to the activities and accomplishments of the headquarters of the American Medical Association. Certainly all the state organizations and the larger county societies could have such efforts made, and the more generally the work at headquarters is understood and appreciated, the greater is the solidarity of the profession generally. Your reference committee is so impressed with the weight of the duties of the presidency of the American Medical Association as to venture the suggestion that consideration be given to the employment of a man at headquarters who could act in the capacity of field agent and aid in educating not only the medical profession but also the laity and especially the other professions as well.

3. Your reference committee would urge on this House of Delegates the absolute necessity of following the advice of the President of our Association in unstinting support of the federal government in the campaign for preparedness in the present chaotic state of a world in which right and reason have been cast to the winds and only brute force is recognized and heeded.

4. Your reference committee advocates unwavering support of the demand of the President of our Association for the continued freedom of medicine from political domination. It admits the necessity, however, of the surrender of a measure of freedom under the stress of military necessity but demands that provision be made for the return of full freedom when the military emergency shall have passed.

5. Your reference committee commends especially the comments of the President of our Association on the basic causes of disease inherent in poor housing, poor diet, poor raiment and the lack of observance of the golden rule in all walks of life. Governmental efforts at remedying these basal defects in our American society of today and frank recognition by government of the common sense principle that the medical profession is the only segment of our population equipped by education and training to initiate, advise on and carry through a satisfactory national health program would go far toward ameliorating our health and medical problems.

ADDRESS OF PRESIDENT-ELECT

6. Your reference committee would emphasize the danger pointed out by our President-Elect not only to medicine but to society in general of the world chaos of today. It would stress particularly the loss of the sense of responsibility of the individual for his own welfare and that of his dependents and the gradual trend toward the ideology of the totalitarian state—a philosophy incompatible with a free democracy and the greatest measure of individual freedom. The organized medical profession, by its traditional freedom and democracy, not only is able to point the way to a restoration of individual and community self reliance and stability but is definitely obligated to do so.

7. Your reference committee approves the support, voiced by our President-Elect, of the plan of the President of the United States for the construction of small hospitals by using federal funds in communities where actual need can be shown, provided there is strict adherence to the President's plan for construction only where actual need can be shown, and then only where the local governmental unit can demonstrate its ability and willingness to maintain the institution when built. Your reference committee feels that it is a duty of the medical profession to emphasize to local governmental bodies applying for hospital construction the actual cost of maintenance of such institutions.

8. Your reference committee especially commends to this House of Delegates the suggestion offered by our President-Elect that it is a responsibility of the medical profession to initiate programs to meet community needs for medical and health betterment. Moreover, the medical profession not only should lead in health movements but should engage in active support of all programs for community betterment and should guide the health and medical phases of all such activities.

9. Your reference committee would urge on each member of this House of Delegates the necessity for careful study of the duties of its members as outlined by our President-Elect. We are the liaison officers between the personnel we represent and the national organization and should function as such. We should know every phase of the needs of our constituencies as well as the program and work of the national organization and should disseminate this knowledge to layman and physician alike. Your reference committee commends also his remarks on the responsibilities and duties of this House of Delegates as an organized body.

10. Your reference committee commends further the historical sketch given by our President-Elect of the efforts which have been made by the American Medical Association to secure the unification and integration of the health activities of the federal government. Even though such efforts extending over almost three quarters of a century have been unavailing, we should continue them until success crowns our efforts, for nothing is ever settled until it is settled right.

11. In closing, your reference committee would commend to the House of Delegates and to the profession generally the suggestion of our President-Elect that "the medical profession should go along with the government as far as possible for the common good without sacrificing its individual interests in the care of the sick and its collective interests in the prevention of disease." It is the opinion of your reference committee that government, the people and the medical profession will all fare better if government and the profession sit down around the conference table and agree on health plans and activities that can be mutually followed.

Respectfully submitted.

WALTER E. VEST, Chairman.
WILLIAM R. BROOKSHER.
JAMES Q. GRAVES.
WALTER B. MARTIN.
ANDREW F. MCBRIDE.

The report of the reference committee was adopted, as amended, section by section and as a whole, on motions of Dr. Vest, duly seconded and carried after discussion.

Report of Reference Committee on Hygiene and Public Health

Dr. E. S. Hamilton, Chairman, presented the following report, which was adopted on motion of Dr. Hamilton, seconded by Dr. Felix J. Underwood, Mississippi, and carried:

Your reference committee recommends the passage of the Resolutions on Venereal Disease Program, which had been introduced by Dr. J. N. Baker, Alabama.

Respectfully submitted.

E. S. HAMILTON, Chairman.
FELIX J. UNDERWOOD.
W. F. DRAPER.
KARL S. J. HOHLEN.
CLYDE L. CUMMER.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Ben R. McClellan, Chairman, presented the following report, which, on motion of Dr. McClellan, duly seconded and carried, was adopted by a rising vote, there being no negative votes:

REPORT OF THE SECRETARY

Your reference committee congratulates the Secretary and the Association in general on the gratifying increase in membership and Fellowship during the last year. It is a source

of satisfaction to observe the increased interest in the affairs of organized medicine displayed by all members of component county medical societies and constituent state medical associations.

In regard to field work, your reference committee believes that ways and means should be devised to lighten the burden now being carried by the President, President-Elect and general officers of the Association, and suggests that the number of those charged with this responsibility be augmented.

Your reference committee expresses appreciation of the valuable service rendered by our beloved Secretary and realizes that his brief report in no way discloses the tremendous amount of work and effort that he expends in the performance of his duties.

REPORT OF BOARD OF TRUSTEES

Your reference committee is impressed with the fact that during the last year there was an expenditure of nearly half a million dollars in carrying on the work of the various councils, bureaus and departments of the Association alone. The average member does not appreciate the expense involved in carrying out successfully the extensive activities of the Association. In view of the fact that demands on the treasury are increasing and returns on investments are decreasing to a serious extent, your reference committee emphatically suggests that any proposed activity, program or study requiring the expenditure of funds be given the most careful consideration. It is gratifying to note the ever increasing popularity of THE JOURNAL, which is due in the main to the excellence of its many departments.

The work in press relations deserves commendation. Wide distribution and control of information concerning matters of health among the newspapers of the country by means of the AMERICAN MEDICAL ASSOCIATION NEWS has been of great value in disseminating authentic information and improving the status of medicine in the eyes of the public.

Your reference committee believes that the financial loss sustained in the publication of the special journals is more than balanced by the services rendered subscribers in making available specialized information. This is a contribution advancing scientific medicine and aiming at improved standards of practice. Your reference committee therefore urges increased support by the members of our Association.

The determination on the part of the Board of Trustees to use every effort and means to defend the American Medical Association against the charges that it is guilty of conspiracy and of violating federal antitrust laws should receive the whole-hearted endorsement of the House of Delegates.

The importance of the work of the Council on Pharmacy and Chemistry, which has been carried on for a period of thirty-five years, cannot be overemphasized. Those members who have given so unselfishly of their time and effort, such as Dr. Hatcher and Dr. Sollmann, are deserving of the greatest praise.

The efforts of the Council on Foods to establish a rational basis in the use of vitamins and in the broader aspects of nutritional problems merits our commendation. It is to be hoped that some of its policing duties in regard to the merits of various foods will be taken over by federal bureaus, where they belong.

Time will not permit an adequate analysis of the work of the Council on Physical Therapy and the Council on Industrial Health. Your reference committee recommends, however, that members of the House familiarize themselves with the activities of these bodies. The value of the Council on Physical Therapy is becoming annually more apparent. Your reference committee notes with approval the very complete program it has initiated and developed. Standardization of apparatus and procedure, well planned research and evaluation of experience in the use of various modalities will do much to safeguard the patient and the profession in the field of physical therapy.

The Bureau of Health Education deserves great credit for carrying on its many activities. Special commendation should be given for its contact with government and lay organizations. Your reference committee believes that the efforts of this bureau should be endorsed and expanded.

The retirement of Dr. William C. Woodward, who directed the activities of the Bureau of Legal Medicine and Legislation for eighteen years, deserves the attention of the House of Delegates. We are all familiar with the great work he has done in behalf of American medicine and your reference committee believes that it voices the sentiments of the House when it conveys to him a special message of appreciation and the wish that he may continue to enjoy good health for many years to come.

Your reference committee suggests careful study of the valuable report of the Bureau of Medical Economics. The appropriation by hospitals of the services of the physician both clinical and laboratory is to be deplored and if allowed to continue and develop will threaten the future of medicine and endanger the welfare of the public. It is high time that the medical profession through its state and county societies assert its rights in no uncertain terms regarding these abuses. The ten principles adopted by the House of Delegates in 1937 and revised and reaffirmed in 1938 provide that hospital service insurance should not include any type of medical care and your reference committee again stresses the importance of this declaration.

Your reference committee respectfully suggests that some agency of the American Medical Association study the indemnity plans offered by old line insurance companies to the end that the physician and the insurance company may arrive at a better understanding of their common interests.

The responsibility of the Bureau of Investigation has been greatly increased since the adoption of the Wheeler-Lea Amendment to the Federal Trade Commission Act. Your reference committee notes with satisfaction the Bureau's contacts with the lay public.

Your reference committee congratulates the Bureau of Exhibits on the high quality of the exhibits at our annual sessions as well as of those displayed at the New York and San Francisco fairs.

In conclusion, your reference committee marvels at the untiring efforts and record of achievement of your Board of Trustees.

Respectfully submitted.

BEN R. MCCLELLAN, Chairman.
W. F. BRAASCH.
JOHN M. BIRNIE.
JOHN H. FITZGIBBON.

Attendance at Executive Session

On motions, duly made, seconded and carried, attendance at the Executive Session was granted, in addition to those previously indicated, to Drs. Ross A. Woolsey, past president of the Missouri State Medical Association; Grady N. Coker, past president of the Medical Association of Georgia; Tom B. Throckmorton, who previously served in the House of Delegates; William H. Ross, past president of the Medical Society of the State of New York; J. Milton Robb, past president of the Michigan State Medical Society, and N. S. Davis III, president of the Chicago Medical Society.

Executive Session—Tuesday Afternoon, June 11

The Sergeants-at-Arms polled the House, after which, on motion of Dr. R. W. Fouts, Vice Speaker, duly seconded and carried, the House went into Executive Session at 2 p. m., with Dr. H. H. Shoulders, Speaker, presiding.

Report of Reference Committee on Executive Session

Dr. Edward R. Cunniffe, Chairman, presented the following report, which was adopted, after discussion, section by section and as a whole, on motions of Dr. Cunniffe, duly seconded and carried:

1. Resolutions Authorizing Organization of a Committee on Medical Preparedness: Your reference committee is proud to see the patriotic tradition of the medical profession so well exemplified in these spontaneous and thorough resolutions of our Board of Trustees. It is in strict accord with the history and traditions of the American Medical Association, which has always been foremost in offering all its facilities and services to our government in times of stress or emergency. Your reference

committee has learned that through an unintentional omission the name of the Chairman of the Board of Trustees was not included among the ex officio members and the method of appointing the members from the House was not specified.

Your reference committee feels that the Chairman of the Board of Trustees should be included among the ex officio members and that the members selected from the House of Delegates should be appointed by the Speaker of the House of Delegates.

Your reference committee wholeheartedly approves these resolutions and moves their adoption with the inclusion of these two changes.

2. Procurement of Professional Personnel for Medical Corps of Army in Event of a National Emergency: Your reference committee has carefully considered this plan presented by Dr. George C. Dunham and is pleased to see such evidence of a desire for cooperation. It endorses the principles advocated but feels that the details should best be left to the committee established by the resolutions of the Board of Trustees.

Your reference committee feels that in the choice of personnel every physician capable of rendering service should be given opportunity to offer such service to our government; that in the selection of personnel for special services there should be no arbitrary selection on the basis of organization or bodies thus far still in a developmental stage, but rather that membership in well recognized scientific specialty organizations, hospital appointments and similar qualifications should also be considered for this purpose.

Your reference committee therefore recommends that the thanks of the House be extended to Dr. Dunham and that the general principles of his plan be endorsed.

3. Resolution on Military Activities: The following resolution, presented by Dr. George R. Dillinger, Indiana, was considered by your reference committee:

WHEREAS, Worldwide social change, instability and a state of war exist among other nations; and

WHEREAS, These conditions threaten our nation and our American ideals; and

WHEREAS, The American Medical Association believes that national unity and a prepared national defense offer the best manner for defending our nation and the American way of living against these conditions; therefore be it

Resolved, That the American Medical Association constitute and empower a committee to act in liaison with proper military and civil authorities and veterans' organizations to make a complete study and prepare a detailed program for medical coordination and preparedness in the event of M-day (mobilization-day) becoming a reality, to the end that in such event an unhurried and effective program will be established supplying first the medical needs of the military; second, the proper medical care at home during a military emergency.

Your reference committee wishes to congratulate the Indiana State Medical Association on its early consideration of medical defense and to recognize the value of its committee, which is already functioning and will be of great aid to the American Medical Association committee. It recommends the approval of the principles of the resolution.

4. Resolutions on Protection of Practices of Physicians Who Might Be Called to Military Service: Your reference committee had before it the following resolutions introduced by Dr. Carrington Williams, Virginia:

WHEREAS, Military preparations in the United States will require the use of a large number of members of the American Medical Association as officers in the Medical Corps of the Army and of the Navy; and

WHEREAS, The average physician has responsibilities and financial obligations out of proportion to the pay of these officers; and

WHEREAS, The medical profession has always recognized the principle of protecting the interests of fellow physicians; therefore be it

Resolved, That the House of Delegates recommends to the constituent state and component county societies that they work out plans whereby the practice of physicians absent from their homes in the service of our military and naval forces both in periods of training and in actual service be protected and whereby some financial return from such practice be secured for the physician so absent in the service; and be it further

Resolved, That the House of Delegates urges the component societies to make every effort to work out such plans in the shortest possible time as a part of the contribution of this Association to military preparedness; and be it further

Resolved, That the Secretary be requested to forward copies of these resolutions to the presidents of the constituent state and component county societies.

Your reference committee, having carefully considered these resolutions, wishes to endorse in principle the ideas postulated and to urge further that the constituent state and component county societies be authorized to set up committees to work out methods to protect both the financial and the professional interests of physicians who may be engaged in either temporary or continuous military service.

5. Resolution Concerning Certain Objectionable Practices of Insurance Companies: Your reference committee considered the following resolution introduced by Dr. John H. Fitzgibbon, Oregon, and adopted by the Council of the Oregon State Medical Society:

WHEREAS, Certain insurance companies that write medical indemnity insurance, or medical expense insurance or health and accident insurance or insurance providing for compensation and medical aid benefits to workmen injured in the course of their employment have established the practice of demanding from physicians reports of diagnosis and treatment without the authorization of the assured; and

WHEREAS, Many of these companies also attempt to fix the fee for the physicians' services and often attempt to apply the fee schedule of the state agency administering the workman's compensation law, even though the physician has no contractual or other relationship with the insurance company involved; and

WHEREAS, The fee schedule of the agency administering the various workman's compensation laws has been established in cooperation with representatives of the medical profession and is based on a generous discount from customary fees offered by the medical profession to a nonprofit state agency as a gratuitous contribution to the welfare of their state and community; and

WHEREAS, There is no justification for commercial organizations operating for profit to apply such fee schedules in order to make a profit for themselves; and

WHEREAS, These practices are not confined to Oregon but are national in their scope; now therefore, be it

Resolved, By the Council of the Oregon State Medical Society, (1) That the practices of such insurance companies in demanding from physicians reports of diagnosis and treatment without the authorization of the assured and in so fixing the fee for the physician's services even though the physician has no contractual or other relationship with the company involved are hereby declared to be contrary to the best interests of the public and the medical profession; (2) That a copy of this resolution be sent to the Secretary of the American Medical Association for the attention of the House of Delegates of that Association; and (3) That the delegate from Oregon to the coming session of the House of Delegates of that Association be furnished with a copy of this resolution and that he be asked to have this matter brought to the attention of said House of Delegates.

Recognizing the problems arising from the conditions set forth in this resolution and recognizing injustices connected therewith, your reference committee recommends that the House of Delegates go on record as disapproving practices by insurance companies tending to bind the profession to accept voluntarily fee schedules adopted for the purpose of providing medical service insurance to groups of limited income or fee schedules accepted from the operations of workman's compensation acts.

Respectfully submitted.

EDWARD R. CUNNIFFE, Chairman.
FRANCIS F. BORZELL.
JAMES R. MCVAY.
J. DUFFY HANCOCK.
EDWARD M. PALLETTE.
MCLAIN ROGERS.
W. H. MYERS.

Report of the Committee to Confer and Consult with Proper Federal Representatives

In the absence of Dr. Irvin Abell, Chairman of this committee, the Secretary, at the request of the House, read the following report of the committee:

To the House of Delegates, American Medical Association:

Under date of Dec. 29, 1939, the President of the United States, through his secretary, Edwin M. Watson, extended an invitation to the committee appointed by the House of Delegates of the American Medical Association to confer with federal representatives relative to the proposed National Health Program to meet again with him on January 10 to discuss a plan for the construction of hospitals with federal funds, first suggested by him on December 21. Representing the American Medical Association were the following members of the original committee: Drs. E. H. Cary, Walter F. Donald-

son, Frederic E. Sondern, Walter E. Vest, Fred W. Rankin and Irvin Abell. Dr. Austin A. Hayden was appointed by the Speaker of the House, Dr. H. H. Shoulders, to fill the vacancy created by the illness of Dr. Henry A. Luce. Also in attendance representing the Association were Drs. Olin West, Secretary, R. G. Leland of the Bureau of Medical Economics and W. D. Cutter of the Council on Medical Education and Hospitals. In attendance at the conference were representatives of the American, Catholic and Protestant hospital associations in the persons of Drs. Fred Carter and Bert W. Caldwell, Monsignor H. M. Griffin, Rev. Alphonse Schwitalla and Rev. Paul R. Zwilling. The federal representatives included Surgeon General Thomas Parran and Dr. Joseph Mountin of the U. S. Public Health Service and Surgeon General Ross T. McIntire of the Navy. Previous to the conference with the President the representatives of the medical profession and the hospital associations met and discussed the situation in the light of such knowledge as had become available through the letter of the secretary to the President, the press release of the latter on Dec. 21, 1939, and the letter of Surgeon General Parran to state health officers. The following memorandum of principles was adopted without dissent:

Following a discussion participated in by the committee representing the American, the Catholic and the Protestant hospital associations and the American Medical Association, the following points are presented as representing their joint conclusions:

1. Hospitals to be built only where need for same can be shown. Advisory consultation in the determination of such need to be given by the state medical and hospital associations, the state health department and the county judges or officials of the counties in which such hospital service is proposed.

2. Size of hospital to be commensurate with the needs of the community and the ability of the latter to support it.

3. Means for the maintenance and upkeep of such hospitals to rank in importance equal to that of construction.

4. Since the important objective of the program is the service it can render, hospital construction and administration, equipment, staff and personnel to meet the standards which the American Medical Association, the American College of Surgeons and the hospital associations regard as minimal for rendering such service in the various localities. Where needed, since highly specialized facilities and personnel cannot be made available in all places, affiliation with larger hospitals or hospital centers to be had to the end that highly specialized services, diagnostic and therapeutic, be made available to all.

5. Maintenance of a standard of professional and hospital service to keep it efficient and to prove attractive to qualified men and women as a career.

6. Utilization of existing facilities where possible, the program under no circumstances to be allowed to develop into competition with the voluntary hospitals but rather to foster cooperation between the two groups.

7. Many smaller communities can be better served by the utilization of bed vacancies in available existing institutions than by the construction of new hospitals, transportation and per diem expense to be borne by federal, state and/or county funds. Where state and/or county funds cannot be provided, such expense to be met by federal grants-in-aid to, and to be dispensed by, local agencies.

Ambulance service and good roads will permit this type of service to operate safely, efficiently and economically in communities not financially able to support a hospital.

The conference held in the White House at 11 a. m. Jan. 10, 1940, was opened by the President, who discussed in a general way the difficulties, financial and legislative, of providing a national health service such as that proposed in the National Health Program. The impression gained from the President's statements is that the cash involved will, temporarily at least, inhibit the administration from fostering such legislation at the present session of the Congress. The President proposed the construction of hospitals as an experiment, the plan being somewhat as follows: for the present year to construct fifty 100 bed hospitals in communities where such facilities do not now exist. The buildings are to be fire proof, one story in height and of the poured concrete type. By using the models and molds of uniform size and similarity and employing WPA labor, it is estimated that a 100 bed hospital can be constructed and equipped at a cost not to exceed $150,000, or $1,500 a bed. It was stated that ten million dollars is available for the first year of the program. When asked if the program would be a continued one, the reply was that the proposed project is an experiment and, if one year's operation proved its success, another fifty hospitals could be considered as a program for another year. Requests for location of hospitals are to come from local communities, which must at the same time furnish assurance of their ability to maintain and operate them. After construction the hospitals are to be given to the local community, the government retaining title to the properties. The personnel of the staff is to be drawn from the local profession and an effort made to affiliate the newly constructed hospitals with well established nearby institutions, with the view of stimulating and maintaining standards of professional service. The United States Public Health Service will have the duty of inspection with relation to maintenance of standards, executive, administrative and professional. The President expressed the wish that the public may have access to these hospitals for consultative and diagnostic as well as therapeutic service. It was stated that the program in no wise contemplated competition with already existing hospitals, realizing that in isolated instances such conflict will occur. When asked if vacant beds in existing institutions could be utilized for the hospitalization of the indigent, the per diem cost being met by federal funds, the President said that such a plan of federal subsidy would result in an expansion throughout the country so great as to entail a cost that could not be met, concluding with the significant statement that the primary responsibility for the medical care of the indigent rests on the state and the local community. The conference was friendly throughout and the principles of the plan proposed offered nothing of serious moment to which objection was made; its practicability was not under discussion. At the conclusion of the conference a copy of the memorandum of principles listed and a selection of brochures from the files of the American Medical Association assembled by Drs. Leland and Cutter dealing with various hospital problems were left with the President.

Following the conference a meeting of the representatives of the medical profession and the hospital associations was held at which Surgeon General Parran was present. He presented for inspection the hospital blue print prepared by the architect of the WPA engineering department. To those familiar with hospital arrangement it was apparent that alterations were necessary to obtain efficient service. Surgeon General Parran explained the method of selection of hospital sites as follows: Requests for hospitals are to be made by local communities with the concurrence of the local profession, the health or welfare department and responsible local officials, such requests to be considered by the United States Public Health Service and an advisory group of six physicians selected from the country at large, their qualifications to be familiarity with hospital problems. On Sunday, January 21, Surgeon General Parran called the chairman of this committee on the long distance phone relative to the form of the material regarding the hospital program to be presented to the Congress by the President on his birthday, January 30. Dr. Parran stated that he wished the members of our committee to be familiar with the wording and the format of the material, evidently desiring to avoid the criticism made regarding the formulation and introduction of the Wagner bill. He stated that, in order to avoid the possibility of press publicity previous to the presentation by the President, it was further desired that no copies of the tentative program be sent to the members of the American Medical Association and the hospital association committees. I requested that a digest of the material be sent to me, to which he replied that he preferred reading to me over the telephone the entire outline. I presume this to have covered between two and three typewritten pages and as I listened to its reading I detected nothing other than that which had been presented to us in Washington both by the President and later by Dr. Parran at our conference at the Mayflower Hotel. The suggestion is made that the sum of ten million dollars be appropriated for this year and an equal sum as may be needed each year hereafter, the site of the hospitals to be determined by application of the individual communities with assurance of ability to maintain hospitals when constructed; investigation then to be carried out by the United States Public Health Service, with confirmation or rejection by an advisory board of six members to be selected from the country at large and to consist of men more or less familiar with the hospital situation; the hospitals to be manned by local personnel and to be inspected by the United States Public Health Service with a view to the maintenance of standards and efficiency, and the building of the hospitals to be carried out by

the Works Projects Administration and to be of the approximate cost mentioned in our conference.

The Wagner-George hospital construction bill, S. 3230, seeking to make legally active the President's program, was introduced into the Senate and referred to the Senate Committee on Education and Labor. Representatives of the American Medical Association appeared before a subcommittee of this committee and expressed the views of the Association relative to the matter under discussion. The committee retained some of the provisions of the Wagner-George bill, inserted some of the provisions of the Taft plan and added some provisions of its own. Some of the suggestions advocated by representatives of the American Medical Association and of the hospital associations are found in the bill reported by the Senate Committee on Education and Labor to the Senate on April 30. An analysis of this bill is to be found in the Organization Section of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 11, 1940, pages 1927 and 1928.

Respectfully submitted.

IRVIN ABELL, Chairman.

After discussion, the report of the committee was referred to the Reference Committee on Legislation and Public Relations.

Dr. R. W. Fouts, Vice Speaker, moved that the House adjourn from executive session and immediately convene in regular session. The motion was seconded by Dr. Walter E. Vest, West Virginia, and carried.

The Executive Session adjourned at 4 p. m.

Tuesday Afternoon—(Continued)

The House reconvened in regular session at 4 p. m. with Dr. H. H. Shoulders, Speaker, presiding.

Message from Dr. Chevalier Jackson

The Secretary read a telegram received from Dr. Chevalier Jackson, Philadelphia, who had been awarded the Distinguished Service Medal.

On motion of Dr. A. T. McCormack, Kentucky, seconded by Dr. J. E. Paullin, Section on Practice of Medicine, and carried, the House recessed at 4:10 p. m.

Third Meeting—Thursday Afternoon, June 13

The House of Delegates was called to order at 1:20 p. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Credentials

Dr. J. Newton Hunsberger, Chairman, stated that a total of 171 delegates had been seated.

Roll Call

The Secretary called the roll and announced that more than a quorum had responded.

Presentation of the Minutes

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried, that the House dispense with the reading of the minutes.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. David D. Scannell, Chairman, presented the following report, which on motions of Dr. Scannell, duly seconded and carried, was adopted section by section and as a whole:

Two matters have been referred to the Reference Committee on Amendments to the Constitution and By-Laws:

1. Proposed Amendment to By-Laws, chapter XV, section 1: This comes from the Reference Committee on Sections and Section Work and has to do with the establishment of a Section on Anesthesiology. In the words of that reference committee, "It has been evident for several years that the physicians interested in this specialty have needed a place to discuss their scientific papers. Your reference committee feels that the formation of such a section will fill a pressing need for the anesthetists and others who have an allied interest and recommends the establishment of such a section."

Your Reference Committee on Amendments to the Constitution and By-Laws likewise approves the establishment of a Section on Anesthesiology.

Your Reference Committee on Amendments to the Constitution and By-Laws recommends that chapter XV, section 1, of the By-Laws be amended by changing the present number "16" to number "17" and by inserting "16. Anesthesiology" after "15. Radiology," so that chapter XV, section 1, will read as follows:

SECTION 1. TITLES OF SECTIONS OF SCIENTIFIC ASSEMBLY.—The Scientific Assembly of the American Medical Association shall be divided into the following sections:

1. Practice of Medicine.
2. Surgery, General and Abdominal.
3. Obstetrics and Gynecology.
4. Ophthalmology.
5. Laryngology, Otology and Rhinology.
6. Pediatrics.
7. Pharmacology and Therapeutics.
8. Pathology and Physiology.
9. Nervous and Mental Diseases.
10. Dermatology and Syphilology.
11. Preventive and Industrial Medicine and Public Health.
12. Urology.
13. Orthopedic Surgery.
14. Gastro-Enterology and Proctology.
15. Radiology.
16. Anesthesiology.
17. Miscellaneous Topics. (As amended, 1932, 1937, 1940.)

2. (*a*) Report of Judicial Council Recommending Amendment to Principles of Medical Ethics, chapter III, article I, section 5: The Judicial Council feels that a study of this matter has developed certain patentable features not now included but which should be, believes that the wording of the section can be improved, and recommends that the Principles of Medical Ethics, chapter III, article I, section 5, be amended to read: "SEC. 5.—It is unprofessional to receive remuneration from patents or copyrights on surgical instruments, appliances, medicines, foods, methods or procedures. It is equally unprofessional by ownership or control of patents or copyrights either to retard or to inhibit research or to restrict the benefit to patients or to the public to be derived therefrom. It is unprofessional to accept rebates on prescriptions or appliances, or perquisites from attendants who aid in the care of patients."

Your reference committee approves the recommendation that chapter III, article 1, section 5, of the Principles of Medical Ethics be amended as suggested by the Judicial Council.

2. (*b*) Report of Judicial Council Dealing with Membership: This subject is discussed by the Council with the profoundest thought and honest and careful consideration. It cannot easily be summarized. Your reference committee feels that the matter is so important and vital that it should be read again, particularly for the benefit of those who did not hear it when read. This involves an amendment to the Constitution and, if adopted, would have to lie over a year for final approval.

Your reference committee approves this recommendation of a change of article 8, section 1, of the Constitution pertaining to members and Fellows and recommends its adoption.

Respectfully submitted.

DAVID D. SCANNELL, Chairman.
WILLIAM WESTON.
BARNEY D. HEIN.
CHARLES A. DUKES.
A. A. WALKER.

On motion of Dr. Scannell, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried, chapter XV, section 1, of the By-Laws was amended in accordance with the recommendation contained in the report of the reference committee.

Section 5, article I, chapter III, of the Principles of Medical Ethics was amended in accordance with the report of the reference committee, on motion of Dr. Scannell, duly seconded and carried.

Resolutions Reaffirming Approval of Activities of Council on Medical Education and Hospitals

Dr. John H. Musser, Acting Chairman of the Council on Medical Education and Hospitals, presented the following resolutions:

WHEREAS, When the American Medical Association was organized in 1847 the following statement was contained in the Plan of Organization: "Inasmuch as an institution so conducted as to give frequent, united and emphatic expression to the views and aims of the Medical Profession in this country must at all times have a beneficial influence and supply more efficient means than have hitherto been available here for cultivating and advancing medical knowledge, for elevating the standard of medical education, for promoting the usefulness, honour, and interests of the Medical Profession, for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men, for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it"; and

WHEREAS, In successive years the Committee on Education reported on existing conditions and made recommendations for the sound development of medical education in this country; and

WHEREAS, Immediately after the reorganization of the American Medical Association in 1902 more active measures were taken to examine and appraise the existing facilities for the training of physicians, leading, in 1904, to the establishment of the Council on Medical Education as a standing committee of the House of Delegates; and

WHEREAS, The Council conducted the first comprehensive survey of medical schools that was ever made and later secured the assistance of the Carnegie Foundation for the Advancement of Teaching, which sponsored the extraordinarily influential Flexner report; and

WHEREAS, Over a period of thirty-five years the Council on Medical Education and Hospitals has, through its inspections, reports and published classifications, steadily raised the standards of medical education and practice; and

WHEREAS, Throughout the period of its existence the Council has sought attainment of objectives equally beneficial to the medical schools, the hospitals, the interns, the medical profession and the public; therefore be it

Resolved, That the House of Delegates reaffirms its approval of the activities of the Council; and be it further

Resolved, That the Council is hereby directed to continue to discharge those functions outlined in chapter IX, section II, of the By-Laws, namely (1) to investigate conditions of medical education including premedical, undergraduate and graduate medical education, hospitals and associated subjects and to suggest means and methods by which the same may be improved; (2) to endeavor to further the realization of such suggestions as may be approved by the House of Delegates.

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the resolutions presented by Dr. Musser were adopted.

Report of Reference Committee on Miscellaneous Business

Dr. Charles G. Strickland, Chairman, presented the following report, which was adopted on motion of Dr. Strickland, seconded by Dr. A. T. McCormack, Kentucky, and carried.

On June 11 Dr. A. T. McCormack, Kentucky, introduced a resolution praising the American Museum of Health at the New York World's Fair, complimenting the city administration and suggesting the promotion of similar museums in other parts of the country.

Your referenece committee recommends the adoption of that resolution.

Respectfully submitted.

CHARLES G. STRICKLAND, Chairman.
HOWARD L. SNYDER.
HENRY C. MACATEE.
FREDERIC E. SONDERN.
HERBERT L. BRYANS.

Report of Reference Committee on Legislation and Public Relations

Dr. F. S. Crockett, Chairman, presented the following report, which was adopted section by section and as a whole, on motions of Dr. Crockett, duly seconded and carried:

REPORT OF COMMITTEE ON LEGISLATIVE ACTIVITIES

The report of the Committee on Legislative Activities reflects the current trends of legislation and social pressure on the development of medical practices. Your reference committee commends the foresight of the Committee on Legislative Activities as evidenced by the early formation of measures to insure presentation to the Subcommittee of the Senate Committee on Education and Labor of full and adequate factual data pertinent to the Wagner bill. In the opinion of your reference committee, this activity on the part of the Committee on Legislative Activities amply justifies the wisdom of the House of Delegates in its creation. Your reference committee also commends the spirit of those physicians named in the report, who added their special skills and knowledge in testimony before the Senate subcommittee.

The federal program for the building of Veterans' hospitals beyond the apparent need of the moment has been a matter of some concern to the medical profession in the past. Much was accomplished by the Committee on Legislative Activities with the help of the American Legion in emphasizing the element of need as the determining factor in hospital construction.

Recent trends in social thinking are reflected by the proposal of the President of the United States to build hospitals with federal money in communities where the need exists. Federal measures of this type for the civilian population make more difficult our efforts to check or modify hospital construction for the care of other groups.

The Committee on Legislative Activities has followed the development of the Farm Security Administration plan for medical care of clients. This is obviously an effort to use the insurance principle to pay for medical service. It has been successful in securing cooperation of component county medical societies in many communities and, while acknowledged as experimental in scope, the experience seems to have contributed something to the solution of the medical problems of a farm group which is medically indigent.

The Committtee on Legislative Activities has continued its contact with the very influential farm group, The Associated Women of the American Farm Bureau Federation. Your reference committee commends the committee for its continued effort to develop, in cooperation with this farm group, satisfactory improvements in rural medical care.

Your reference committee commends the efforts of the Committee on Legislative Activities in keeping constantly informed of legislative measures before the Congress. The profession has been unusually fortunate in having one of Dr. Cary's experience and ability to guard the ramparts of medicine's citadel against the blitzkrieg of external foes and the subversive activities of fifth columnists within our ranks.

Your reference committee, in closing, wishes to emphasize the expression of the Committee on Legislative Activities concerning the loss suffered by the profession in the death of Dr. C. B. Wright. Dr. Wright was one of those whose vision helped guide this House of Delegates in the creation of the Committee on Legislative Activities, as a member of which he served long and faithfully. The tribute of the Committee on Legislative Activities to his intelligence, mental honesty and faithfulness to his professional ideals should be reemphasized by inclusion in this report.

REPORT OF COMMITTEE TO CONFER AND CONSULT WITH PROPER FEDERAL REPRESENTATIVES

The report of Dr. Irvin Abell, Chairman of the Committee to Confer and Consult with Proper Federal Representatives, which was appointed by the House of Delegates at its special session in 1938, outlined certain principles which your reference committee wishes to reaffirm.

Since the report was prepared by Dr. Abell, a bill has been introduced in Congress and, with certain changes, passed unanimously by the Senate.

Your reference committee believes that the program for hospital construction originally suggested by President Roosevelt contained worthy objectives. This program, as contemplated in the Wagner-George bill, was reported to the Senate by the Committee on Education and Labor, which stated in part: "Your committee recognizes that the program proposed under S. 3230 is only a step toward the solution of the health problems which have received its attention for the past several months, and would provide increased hospital facilities only in localities where the need is most desperate. It is felt, however, that this measure should be immediately adopted because of the pressing necessity of the situation, and your committee has

designed the measure so it will fit into a more comprehensive program which is being formulated by your committee."

In further support of this bill, Senator Murray, chairman of the subcommittee of the Senate Committee on Education and Labor that conducted hearings on the bill, stated in part on the floor of the Senate at the time this bill was presented for consideration: "Mr. President, in conclusion I should like again to say that this proposed hospital construction program should be recognized simply as a very important step toward the solution of the national health problems which have received the committee's attention for many months. It will provide increased hospital facilities only in localities where the need is most desperate. The proposed legislation has been so designed that it can fit into a more comprehensive program which in the future may be considered desirable."

Your reference committee finds itself in harmony with the action of the House of Delegates in approving that portion of the address of President-Elect Van Etten in which he referred to the plan of the President of the United States for the construction of small hospitals with the use of federal funds in communities where actual need can be shown, provided there is strict adherence to the President's plan for construction only where actual need can be shown and then only where local governmental units can demonstrate their ability and willingness to maintain the institutions when built. Your reference committee believes that it is necessary for the medical profession to emphasize to local governmental bodies the cost of maintenance of the institutions which may be constructed under this proposed legislation.

Your reference committee appreciates the fact that this bill is in the nature of an experimental venture; it would be unfortunate if it included any provisions that might possibly militate against an adequate appraisal of its fundamental merits. It seems to your reference committee that there are several features of the bill as passed by the Senate that will create some difficulty in making that appraisal.

In the first place, the President, in his special message to Congress, contemplated only the provision of hospital beds as distinguished from medical care. The bill as passed by the Senate goes beyond this by defining a hospital to include health, diagnostic and treatment centers. Under this definition such centers may be created entirely apart from hospitals as they are generally known.

In the second place, the bill as passed requires that projects to be constructed from the appropriation made available during the first year of its operation shall be approved by the National Hospital Advisory Council. Projects to be constructed during the succeeding five year period are not subject to the approval of that council. If the approval of the council is desirable for projects to be constructed during the first year, such approval is desirable also for projects to be constructed during the succeeding five years.

In the third place, an amendment to the bill, offered by Senator Murray of Montana on the floor of the Senate, was unanimously adopted, contemplating osteopathic representation on the council. Your reference committee believes that this reference to osteopathic representation on the council is entirely unwarranted and should be eliminated from the bill.

In the fourth place, discussion has arisen with respect to the method provided in the bill for the appointment of members of the council. It has been suggested that the council should be appointed by the President.

The bill is now pending in the House Committee on Interstate and Foreign Commerce and will be given further consideration by that committee. In order that the features of the bill just discussed may be corrected, your reference committee recommends that the Bureau of Legal Medicine and Legislation be urged to continue appropriate steps to this end.

Your reference committee urges that each constituent state medical association create a special committee to act in an advisory capacity to the executive officer of the state health department on any hospital construction projects that may be contemplated under the provisions of the pending legislation.

Your reference committee believes that the House of Delegates should show its appreciation of the services of the special committee appointed by the Speaker, of the officers of the Association and of the headquarters personnel that met with the President in connection with this hospital construction program, and recommends that this special committee be continued, to be on call by the President of the United States or other governmental authorities.

Respectfully submitted.

F. S. CROCKETT, Chairman.
CHARLES J. WHALEN.
L. G. CHRISTIAN.
WINGATE M. JOHNSON.
THOMAS A. MCGOLDRICK.

Report of Reference Committee on Executive Session

Dr. Edward R. Cunniffe, Chairman, presented the following report, which was adopted on motion of Dr. Cunniffe, seconded by Dr. E. G. Wood, Tennessee, and carried:

Information has come to the members of this reference committee that it is expedient to change one part of the resolution offered by the Board of Trustees and adopted by the House of Delegates last Tuesday. The ex officio members of the designated committee reside in New York and Chicago, leaving but seven members for the rest of this great country. Information from military authorities indicates that three additional members would be necessary properly to organize the United States. Therefore your reference committee recommends that that part of the resolution be changed to read as follows:

"*Resolved*, That the House of Delegates authorize the Board of Trustees to create a Committee on Medical Preparedness, to consist of ten members of this House, with the President of the Association, the Chairman of the Board of Trustees, the Secretary of the Association, the Secretary of the Board of Trustees, and the Editor as ex officio members."

EDWARD R. CUNNIFFE, Chairman.
JAMES R. MCVAY.
J. DUFFY HANCOCK.

Report of Reference Committee on Hygiene and Public Health

Dr. E. S. Hamilton, Chairman, presented the following report, which was tabled after discussion, on motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried:

Your reference committee has reviewed the resolutions presented by the Missouri State Medical Association and wishes to report that the facts suggesting the introduction of these resolutions have not been explained and also that it has been unable to obtain the report of the special committee appointed by the Board of Trustees at the request of the House of Delegates at the 1939 session. It has waited for a communication from the Section on Ophthalmology with regard to this problem. Not having received it, your reference committee recommends that these resolutions be returned to the Board of Trustees for further information.

Your reference committee recommends that these resolutions be referred to the Board of Trustees and that the report of the committee as a whole be accepted.

Respectfully submitted.

E. S. HAMILTON, Chairman.
FELIX J. UNDERWOOD.
KARL S. J. HOHLEN.
CLYDE L. CUMMER.
W. F. DRAPER.

Resolution from the Section on Ophthalmology Requesting Appointment of a Committee on Conservation of Vision and Prevention of Blindness

Dr. Arthur J. Bedell, Section on Ophthalmology, presented the following resolution, which was adopted on motion of Dr. Bedell, seconded by Dr. Ivan Fawcett, West Virginia, and carried:

WHEREAS, One state delegation has presented resolutions to the House of Delegates; and

WHEREAS, Other state medical associations have sent their recommendations direct to the section officers; and

WHEREAS, The Section on Ophthalmology has been fully conscious of the needs for a new appraisal of the entire field of conservation of vision and prevention of blindness; and

WHEREAS, The House of Delegates is the legislative body of the American Medical Association; therefore be it

Resolved, That the Section on Ophthalmology does hereby petition the House of Delegates to approve the appointment of a Committee on Conservation of Vision and Prevention of Blindness, this committee to consist of five members of the Section on Ophthalmology who shall be responsible to the Board of Trustees; to collect data showing the status of conservation measures in each state, and to act as a clearing house for all infor-

mation regarding the conservation of vision and prevention of blindness but not to make any pronouncement on policy or establish any rules until such are approved by the Section on Ophthalmology and the Board of Trustees.

Resolution from the Section on Pathology and Physiology Opposing the Formation of a Section on Experimental Medicine by Combination of Two Existing Sections

Dr. L. W. Larson, Section on Pathology and Physiology, presented the following resolution, which was adopted on motion of Dr. Larson, seconded by Dr. Wright Clarkson, Virginia, and carried:

WHEREAS, The suggestion has been made to the Council on Scientific Assembly of the American Medical Association that the Section on Pathology and Physiology be combined with the Section on Pharmacology and Therapeutics to form a Section on Experimental Medicine; be it

Resolved, That the Section on Pathology and Physiology is opposed to such a change.

Resolution from the Section on Nervous and Mental Diseases Endorsing the Formation of a Central Neuropsychiatric Institute to Be Established in the United States Public Health Service

Dr. Henry R. Viets, Section on Nervous and Mental Diseases, presented the following resolution:

WHEREAS, The Surgeon General of the United States Public Health Service in his Annual Report for 1939 stated that "Mental and nervous diseases and epilepsy together represent the largest unsolved problem in medicine. Hospitals caring for mental disease have on their books more than 500,000 patients, and more than 117,000 additional patients are cared for in hospitals for mental defectives and epileptics. These figures represent only an undetermined fraction of the total problem of mental and nervous diseases and epilepsy. Millions of dollars are spent each year for the care and treatment of such patients; but very little is expended for fundamental research which might lead to a measurable control of the problem through discoveries pointing the way to effective measures of prevention and cure." In order to remedy this condition, the Surgeon General recommended the establishment in the Public Health Service of an institute for the study of these diseases; and

WHEREAS, The Section on Nervous and Mental Diseases of the American Medical Association appreciates the magnitude of this problem and deplores the paucity of research efforts directed toward the solution of it, and the treatment of patients in mental hospitals alone costs various governmental agencies approximately $230,000,000 a year, and yet scarcely 1 per cent of this fund is devoted to research that might eventually lead to an appreciable reduction of the financial burden and the relief of many individuals and families of suffering and distress; therefore be it

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association go on record as endorsing a Central Neuropsychiatric Institute to be established in the Public Health Service to carry on research in nervous and mental diseases and that this institute also have at its disposal funds to be allotted to competent groups throughout the country approved by a National Neuropsychiatric Advisory Council to carry on research projects in these diseases.

Such action by this section should be transmitted to the Surgeon General of the United States Public Health Service at Washington, D. C.

It was moved by Dr. Viets and seconded by Dr. Henry A. Luce, Michigan, that this resolution be adopted. The motion was lost and the resolution was not adopted.

Resolution on Training in Legal Psychiatry, from the Section on Nervous and Mental Diseases

Dr. Henry R. Viets, Section on Nervous and Mental Diseases, presented the following resolution, which, after discussion, was tabled on motion of Dr. W. E. Kittler, Illinois, seconded by Dr. John Z. Brown, Utah, and carried:

WHEREAS, The American Medical Association has recognized the need for psychiatric participation in the disposition of criminal offenders, exemplified in its endorsement of the resolution of the American Bar Association, 1929, advocating such psychiatric participation, to wit:

Resolved: 1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

2. That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there has been filed, as part of the record, a psychiatric report.

3. That there be a psychiatric service available to every penal and correctional institution.

4. That there be a psychiatric report on every prisoner convicted of a felony before he is released.

5. That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another without a psychiatric report; and

WHEREAS, The Pennsylvania Plan sponsored by the Joint Medical-Legal Committee of the Philadelphia County Medical Society and the Philadelphia Bar Association, published as a report, March 1940, provides for the creation of an educational program combining the facilities of both an institution of learning and the state and local penal institutions and courts, enabling qualified physicians endowed by fellowships to receive adequate training in legal psychiatry; and

WHEREAS, The Pennsylvania Plan represents the most practical step in the fulfilment of the 1929 resolution of the American Bar Association and the American Medical Association, and would create an important educational service hitherto neglected in the field of mental medicine; and

WHEREAS, The Pennsylvania Plan has received the full approval by the American Psychiatric Association, ninety-sixth annual session, Cincinnati, 1940, and by other learned bodies; therefore be it

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association go on record as endorsing the Pennsylvania Plan.

Report of Reference Committee on Reapportionment of Delegates

Dr. A. T. McCormack, Chairman, presented the following report, which was adopted on motion of Dr. McCormack, seconded by Dr. Harvey F. Garrison, Mississippi, and carried:

Reapportionment of Delegates

Present Number of Delegates		Number of Members 4/1/40	Number of Delegates Under 930 as a Basis of Apportionment
2	Alabama	1,591	2
1	Arizona	369	1
2	Arkansas	1,053	2
7	California	6,542	8
2	Colorado	1,165	2
2	Connecticut	1,701	2
1	Delaware	227	1
1	District of Columbia	883	1
2	Florida	1,331	2
3	Georgia	1,964	3
1	Idaho	289	1
9	Illinois	7,873	9
4	Indiana	3,237	4
3	Iowa	2,429	3
2	Kansas	1,525	2
3	Kentucky	1,893	3
2	Louisiana	1,531	2
1	Maine	729	1
2	Maryland	1,460	2
7	Massachusetts	5,288	6
5	Michigan	4,262	5
3	Minnesota	2,795	4
2	Mississippi	1,127	2
4	Missouri	3,260	4
1	Montana	416	1
2	Nebraska	1,161	2
1	Nevada	113	1
1	New Hampshire	506	1
4	New Jersey	3,784	5
1	New Mexico	268	1
19	New York	16,986	19
2	North Carolina	1,867	3
1	North Dakota	407	1
7	Ohio	6,490	7
2	Oklahoma	1,466	2
1	Oregon	839	1
11	Pennsylvania	9,348	11
1	Rhode Island	500	1
2	South Carolina	996	2
1	South Dakota	325	1
3	Tennessee	1,781	2
6	Texas	4,422	5
1	Utah	466	1
1	Vermont	384	1
3	Virginia	1,781	2
2	Washington	1,515	2
2	West Virginia	1,268	2
3	Wisconsin	2,544	3
1	Wyoming	171	1
1	Alaska	43	1
1	Hawaii	284	1
1	Isthmian Canal Zone	117	1
2	Philippine Islands	1,130	2
1	Puerto Rico	364	1
1	United States Army	.....	1
1	United States Navy	.....	1
1	U. S. Public Health Service	.....	1
15	1 for each scientific section	.....	16
174			175

The total voting membership of the House of Delegates shall not exceed 175.

Your reference committee has made a careful study of the membership and recommends that the basis of the apportionment of delegates for the next three years be one delegate for each 930 members or fraction thereof, each constituent association being represented by at least one delegate irrespective of the number of members.

The By-Laws specifically provide that the total membership of the House of Delegates shall not exceed 175. The total membership of the Association on April 1, 1940, as recorded in the office of the Secretary, was 116,266.

The House of Delegates has added one section to the Scientific Assembly, which is entitled to one delegate.

On the basis of one delegate for each 930 members or fraction thereof, the total membership of the House will be 175, which is one more than the present membership of the House. On this basis California, Minnesota, New Jersey and North Carolina will each gain one delegate, while Massachusetts, Tennessee, Texas and Virginia will each lose one delegate.

Your reference committee further recommends that the Judicial Council be instructed to study the advisability of an amendment to the By-Laws that will provide that no section shall be represented by a delegate after the next reapportionment which has had an average membership registration of less than 200 over the three year period preceding reapportionment.

A. T. McCORMACK, Chairman.
H. B. EVERETT.
WILLIAM A. ELLINGWOOD.
H. H. SHOULDERS.
OLIN WEST.

Messages from National Medical Association

On request of the Speaker, the Secretary read the following telegrams, the first addressed to Dr. Nathan B. Van Etten, President of the American Medical Association, and the second addressed to Dr. H. H. Shoulders, Speaker of the House of Delegates:

Government's request for mobilization of medical men by county societies, may I not ask you to include Negro physicians for mutual cooperation. Dr. Roscoe C. Giles, chairman, Liaison Committee, National Medical Association, named to confer with you. Shall appreciate any courtesy shown him.

A. W. DUMAS SR., M.D., President, National Medical Association.

Dr. A. W. Dumas, President, National Medical Association, has instructed me to confer with American Medical Association with reference to inclusion in proposed program for national defense and to pledge our wholehearted support of program. Will be in Surgical Section.

ROSCOE C. GILES.

The Speaker referred these telegrams to the Chairman of the Committee on Medical Preparedness that is to be appointed.

Message from Puerto Rico

At the request of Dr. Manuel de la Pila, Puerto Rico, the House instructed the Secretary to read a message signed by Dr. Pila, as follows:

As representative of Puerto Rico in the House of Delegates and voicing the spirit of the medical profession of our island, I desire to express our pride and happiness in having joined our destiny in history to that of this great democracy.

In these times when our thoughts, emotions and feelings are being so vitally affected, the medical profession of Puerto Rico wishes to make a solemn declaration. Even as Puerto Rico is today the Gibraltar of America, so does the medical profession of Puerto Rico desire to be the advance fortress in the defense of the ideals and traditions of this great country.

MANUEL DE LA PILA.

Committee on Medical Preparedness

Dr. H. H. Shoulders, Speaker, in accordance with the action of the House of Delegates on the Resolutions Authorizing Organization of a Committee on Medical Preparedness, appointed the following named ten members of the House to serve with the five ex officio members named in the resolutions: Irvin Abell, Louisville, Ky., Chairman; Stanley H. Osborn, Hartford, Conn.; Walter G. Phippen, Salem, Mass.; Harvey B. Stone, Baltimore; James E. Paullin, Atlanta, Ga.; Fred W. Rankin, Lexington, Ky.; Roy W. Fouts, Omaha; Samuel E. Thompson, Kerrville, Texas; Charles A. Dukes, Oakland, Calif.; John H. O'Shea, Spokane, Wash.

ELECTION OF OFFICERS

The Speaker declared the next order of business to be the election of officers.

Election of President-Elect

Dr. David D. Scannell, in behalf of the Massachusetts delegation, nominated for President-Elect Dr. Frank H. Lahey, Boston, and the nomination was seconded by Drs. James E. Paullin, Section on Practice of Medicine; John H. O'Shea, Washington; A. A. Walker, Alabama; E. G. Wood, Tennessee, and many others.

Dr. A. T. McCormack moved that the nominations be closed, that the rules be suspended and that the Secretary be instructed to cast the ballot of the House for Dr. Frank H. Lahey as President-Elect. The motion was seconded by several and carried.

The Secretary cast the ballot of the House for Dr. Frank H. Lahey, Boston, for President-Elect of the American Medical Association, and the Speaker declared Dr. Lahey so elected.

Election of Vice President

Dr. Ben R. McClellan, Ohio, placed in nomination for Vice President Dr. Parke G. Smith, Cincinnati, and the nomination was seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and Dr. Barney J. Hein, Ohio.

The nominations were closed on motion of Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, seconded by Dr. George Gray Ward, Section on Obstetrics and Gynecology, and Dr. Felix J. Underwood, Mississippi, and carried.

Dr. Parke G. Smith, being the only nominee for Vice President, and receiving the unanimous vote of the House for that office, was declared by the Speaker to be unanimously elected Vice President of the American Medical Association for the ensuing year.

Election of Secretary

Dr. William R. Brooksher, Arkansas, nominated Dr. Olin West, Chicago, to succeed himself as Secretary, and the nomination was seconded by Drs. Harvey F. Garrison, Mississippi; James Q. Graves, Louisiana; E. G. Wood, Tennessee; Felix J. Underwood, Mississippi; William Weston, Section on Pediatrics; R. E. Schlueter, Missouri; Charles A. Dukes, California; Peter Irving, New York; J. Newton Hunsberger, Pennsylvania, and others.

Dr. T. K. Gruber, Michigan, moved that the nominations be closed, and the motion was seconded by Dr. Felix J. Underwood, Mississippi, and carried unanimously.

After the vote of the House had been cast, the Speaker declared Dr. Olin West formally elected to succeed himself as Secretary of the American Medical Association for the ensuing year.

Election of Treasurer

Dr. Arthur W. Booth, Chairman of the Board of Trustees, stated that the Board of Trustees authorized him to put in nomination for the office of Treasurer the name of Dr. Herman L. Kretschmer, Chicago, to succeed himself.

Dr. Walter E. Vest, West Virginia, moved that the nomination be confirmed, and the motion was seconded by Dr. George W. Kosmak, New York, and carried, and the Speaker declared Dr. Herman L. Kretschmer elected as Treasurer of the American Medical Association for the ensuing year.

Election of Speaker of the House of Delegates

Dr. R. W. Fouts, Vice Speaker, took the Chair and stated that the next order of business was the election of a Speaker of the House of Delegates.

Dr. Harvey F. Garrison, Mississippi, nominated Dr. Harrison H. Shoulders, Nashville, Tenn., to succeed himself as Speaker of the House of Delegates, and the nomination was seconded by Drs. H. B. Everett, Tennessee; William H. Myers, Georgia; William Weston, Section on Pediatrics; R. E. Schlueter, Missouri; Peter Irving, New York, and James Q. Graves, Louisiana.

Dr. H. B. Everett, Tennessee, moved that the nominations be closed, and the motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried unanimously.

On motion of Dr. John Z. Brown, Utah, seconded by Dr. H. B. Everett, Tennessee, and carried unanimously, Dr. Harrison H. Shoulders was elected Speaker of the House of Delegates for the ensuing year and the Vice Speaker declared him so elected.

Address of President-Elect Frank H. Lahey

The Speaker resumed the Chair, after which Dr. Arthur T. McCormack, Kentucky, presented to the House of Delegates the President-Elect, Dr. Frank H. Lahey, Boston, who addressed the House as follows:

President Van Etten, Mr. Speaker of the House, Delegates and Friends:

I am certain that my closest friend and my most severe critic would not believe me, after my experience as a speaker, if I said that I am at a loss for words. I hesitate to inject at this time even a trace of facetiousness, but the late Dr. Coffey once

said to Mrs. Lahey that all Irishmen if awakened from a sound sleep would wake up talking. I really feel certain that anything that I say at this moment will be inadequate. I realize fully that there is but little personal element to this, and that to be promoted to the position of President-Elect of the parent medical association, representing, as it does, all of American medicine, is one of the greatest honors that can come to a man. I accept it as an instrument and not as an individual.

I see myself promoted to this position largely as an institution involved in postgraduate teaching, and I am certain that if you feel I have earned this honor it is because of this.

I realize fully the magnitude of Dr. Van Etten's undertaking, and I equally realize what the magnitude of the undertaking may be for all of us in these times, which can be characterized as little less than an emergency. I feel very strongly that if we view these times as an emergency we make only the mistake of exaggeration, for which the penalty is little, but if we view them as less than an emergency we make the mistake of minimizing them, for which the penalty may be tremendous.

I hope as we approach this very serious problem (this will not be a speech) that we can smooth out and eliminate at least in terms of a truce or a moratorium the difficulties which have beset medicine, at least until we can face and meet this emergency and overcome some of these difficulties which are so apparent at the present time. It would be wrong for me not to express my personal opinion that we can so overcome them and so harmoniously deal with the situation that other lines of endeavor will be prompted to emulate us, not the least important of which is government. Thank you very much.

Election of Vice Speaker of the House of Delegates

Dr. James Q. Graves, Louisiana, nominated Dr. R. W. Fouts, Omaha, to succeed himself as Vice Speaker of the House of Delegates and the nomination was seconded by Dr. H. B. Everett, Tennessee.

Dr. William Weston, Section on Pediatrics, moved that the nominations be closed, and the motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried unanimously.

After the vote of the House had been cast, the Speaker declared Dr. R. W. Fouts formally elected to succeed himself as Vice Speaker of the House of Delegates for the ensuing year.

Election of Trustees

The Speaker declared the next order of business to be the election of two Trustees, each to serve five years, to succeed Drs. Ralph A. Fenton, Portland, Ore., and James R. Bloss, Huntington, W. Va.

Dr. John H. Fitzgibbon, Oregon, nominated Dr. Ralph A. Fenton, Portland, Ore., to succeed himself as Trustee, and the nomination was seconded by Dr. George W. Kosmak, New York; Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology; Dr. Harvey F. Garrison, Mississippi; Dr. E. H. Cary, Texas; Dr. G. Henry Mundt, Illinois; Dr. Charles A. Dukes, California, and Dr. Wells P. Eagleton, New Jersey.

Dr. John Z. Brown, Utah, moved that the nominations be closed, and the motion was seconded by Dr. James E. Paullin, Section on Practice of Medicine, and Dr. R. E. Schlueter, Missouri, and carried.

After the vote of the House had been cast, the Speaker declared Dr. Ralph A. Fenton duly elected Trustee for a term of five years to succeed himself.

Dr. Walter E. Vest, West Virginia, placed in nomination the name of Dr. James R. Bloss, Huntington, W. Va., to succeed himself as Trustee for a term of five years and the nomination was seconded by Dr. A. T. McCormack, Kentucky; Dr. George W. Kosmak, New York; Dr. Harvey F. Garrison, Mississippi; Dr. William Weston, Section on Pediatrics; Dr. George Gray Ward, Section on Obstetrics and Gynecology; Dr. H. B. Everett, Tennessee; Dr. E. G. Wood, Tennessee; Dr. Wells P. Eagleton, New Jersey; Dr. George P. Johnston, Wyoming, and Dr. Samuel P. Mengel, Pennsylvania.

On motion of Dr. Howard L. Snyder, Kansas, seconded by Dr. James E. Paullin, Section on Practice of Medicine, and carried unanimously, the nominations were closed and, after the vote of the House had been cast, the Speaker declared Dr. James R. Bloss, Huntington, W. Va., elected to succeed himself as a Trustee for a term of five years.

The Speaker announced that there was another vacancy on the Board of Trustees, created by the death of Dr. Charles B. Wright, for a term ending in 1943, and Dr. Francis J. Savage, Minnesota, placed in nomination the name of Dr. William F. Braasch, Rochester, Minn. The nomination was seconded by Drs. Charles W. Roberts, on behalf of the Georgia delegation; Harvey F. Garrison, Mississippi; Harvey B. Stone, Maryland; James C. Sargent, on behalf of the Wisconsin delegation; H. B. Everett, Tennessee, and H. C. Bumpus, Section on Urology.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the nominations be closed, and the motion was seconded by Dr. Harvey F. Garrison, Mississippi, and unanimously carried.

The Speaker, after the vote of the House had been cast, declared Dr. William F. Braasch elected to succeed the late Dr. Charles B. Wright for the unexpired term ending in 1943.

Nominations for Standing Committees

Dr. Nathan B. Van Etten, President, submitted the following nominations for standing committees:

Dr. George Edward Follansbee, Cleveland, to succeed himself on the Judicial Council, for a term ending in 1945.

Dr. A. A. Walker, Birmingham, Ala., to succeed himself on the Council on Scientific Assembly, for a term ending in 1945.

Dr. Arthur T. McCormack, Kentucky, moved that the nominations be confirmed and the nominees be elected to their respective positions, and the motion was seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried unanimously.

Dr. Arthur W. Booth, Chairman, stated that the Board of Trustees desired to place in nomination for member of the Council on Medical Education and Hospitals the name of Dr. John H. Musser, New Orleans, for a term ending in 1947. On motion of Dr. James Q. Graves, Louisiana, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried unanimously, the nomination was confirmed.

Dr. Arthur W. Booth, Chairman of the Board of Trustees, called attention to the fact that the President-Elect was a member of the Council on Medical Education and Hospitals and desired at this time the privilege of retiring, so that there would be another vacancy on that Council.

Dr. Frank H. Lahey, President-Elect submitted his resignation as a member of the Council on Medical Education and Hospitals, which was accepted on motion of Dr. Felix J. Underwood, Mississippi, seconded by Dr. Joseph F. Smith, Wisconsin, and carried. Dr. Arthur W. Booth, Chairman, then stated that the Board of Trustees desired to place in nomination Dr. Herman G. Weiskotten, Syracuse, N. Y., to fill the unexpired term of Dr. Lahey ending in 1945.

The nomination was confirmed, on motion of Dr. George W. Kosmak, New York, seconded by Dr. James E. Paullin, Section on Practice of Medicine, and carried.

Election of Affiliate and Associate Fellows

The Secretary presented the following nominations for Affiliate and Associate Fellowship, which, on motions duly seconded and carried, were confirmed by the House:

NOMINATIONS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Beck, Leroi, St. Joseph, Mo.
Brodhead, George L., New York.
Chenery, William E., Boston.
Clarke, J. Frederic, Fairfield, Iowa.
Davis, Charles E., Honolulu.
Dawson, Lewis R., Seattle.
DeLamater, Hasbrouck, St. Joseph, Mo.
Durkee, John W., Morristown, N. J.
Fensterer, G. A., Garden City, N. J.
Fleming, Ernest William, Los Angeles.
Frazier, J. M., Belton, Texas.
Gilbert, William H., West Los Angeles, Calif.
Hafford, George C., Albion, Mich.
Hays, T. A., Burns City, Ind.
Humiston, Charles E., Chicago.
Johnson, J. R., Syracuse, N. Y.
Kober, A. F., Charles City, Iowa.
Lancaster, Herschel W., Nevada, Mo.
Laning, J. H., Kansas City, Mo.
Lederman, M. D., New York.
MacCarthy, F. H., Laconia, N. H.
May, James V., Watertown, Mass.
Mishoff, I. D., Milwaukee.
Robison, John A., Chicago.
Russell, James M., Monett, Mo.
Schladermundt, Charles A., Buffalo.
Sheets, Vaughn L., Chicago.
Simpson, James Y., Houston, Texas
Spitz, Louis, Philadelphia.
Starbird, E. P., Boston.
Stewart, Edward S., Plainfield, Ill.
Thompson, William H., Winterset, Iowa.
Walsh, James J., New York.
Wilcox, DeWitt G., Newton Center, Mass.
Winheld, Morris, Philadelphia.

NOMINATIONS OF AMERICAN MEDICAL MISSIONARIES FOR ASSOCIATE FELLOWSHIP APPROVED BY THE JUDICIAL COUNCIL

Gass, Herbert Hermann, Baitalpur, India.
Hiscox, Elizabeth J., Nuzvid, South India.
Karcher, James F., Canton, China.
Lawson, Chester W., Hong Kong, China.
Nute, William L., Talas, Turkey.
Wylie, J. Herman, Peiping, China.

NOMINATIONS FOR ASSOCIATE FELLOWSHIP APPROVED BY THE SECTIONS INDICATED

PHARMACOLOGY AND THERAPEUTICS

Edmunds, C. W., Ann Arbor, Mich.

PATHOLOGY AND PHYSIOLOGY

Maison, George L., St. Louis.
Wiggers, Carl J., Cleveland.

NERVOUS AND MENTAL DISEASES

Overholser, Winfred, Washington, D. C.
Walker, A. Earl, Chicago.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Corwin, Edward Henry L., New York.

Remarks by Dr. Irvin Abell

Dr. Irvin Abell, Chairman of the Committee on Medical Preparedness, addressed the House as follows:

Mr. Speaker and Members of the House:

Your action today places at the disposal of the government the entire facilities of the American Medical Association in the development of its preparedness program. The members of this Association have never been lacking in patriotism. I need but to recall to your attention that during World War No. 1 more than 30,000 of our members served with the armed forces of the United States and many thousands more served as chairmen of boards, members of boards, examiners and in various other capacities. Since the organization of the American Medical Association there has never been an emergency confronting our government in which its facilities have not wholeheartedly, unreservedly, been placed at the disposal of the government.

The duties of this committee have not been definitely defined, though I am sure that in our efforts to find out how we can best serve you, in consultation with the members of the organization itself, in consultation with the Surgeon General of the Army and the Surgeon General of the Navy, ways and means will be immediately developed, serving thus as your instrument to carry into fruition your desires and your wishes.

I happen to have in my hand an information card that was used by the Canadian Medical Association, and it is one that is easily applicable to our own membership, so that in sending such cards to each and every member of the profession in the country we can have some accurate information as to their training, their age, their qualifications and the type of work in which they are engaged. The Canadian Medical Association asked its members these questions, which I should like to read to you.

In the national emergency I am prepared to offer my services:

1. For whole-time service abroad.
2. For whole-time service in any part of the continent.
3. For whole-time service in my own locality.
4. For part-time service in my own locality.
5. I am unable to offer my services in any military capacity.

I am sure you will be interested in knowing that of 8,553 members of that association more than 90 per cent placed their services at the disposal of the Canadian government, there being but a few more than 800 who declined to take any part, for various reasons, in the program of the government.

I should like very much if the members of your committee would meet at 4:30 for a preliminary meeting, and I assure the House of Delegates that your committee will immediately go to work and as far as lies within its capacity it will endeavor to bring to the people of this country and to the government your wishes and your orders. In fact, we place our services and our facilities at the disposal of the government for its use.

Place of 1943 Annual Session

Dr. Arthur W. Booth, Chairman of the Board of Trustees, presented the following report:

The Board of Trustees wishes to report that invitations for the 1943 annual session of the Association have been received from St. Louis, San Francisco and Detroit; that St. Louis and San Francisco are qualified to accommodate an annual session of this Association, and that Detroit is less well qualified for the holding of an annual session.

Dr. R. E. Schlueter, Missouri, presented an invitation from the St. Louis Medical Society, the Missouri State Medical Association and the people of the city of St. Louis to meet in St. Louis in 1943.

Dr. Elbridge J. Best, California, extended an invitation from the San Francisco County Medical Society, the California Medical Association, Mayor Rossi of the city of San Francisco, President Ray Lyman Wilbur of Stanford University and President Robert G. Sproule of the University of California to meet in San Francisco in 1943.

Dr. Burt R. Shurly, Section on Laryngology, Otology, and Rhinology, extended an invitation from the Wayne County Medical Society and the Michigan State Medical Society to meet in Detroit in 1943.

The tellers spread the ballot, on request of the Speaker, and the Secretary announced that 165 delegates had been reported present and that 142 votes had been cast, of which San Francisco received 65, St. Louis 46 and Detroit 31.

The Vice Speaker, Dr. R. W. Fouts, took the Chair and announced that, as no city had received a majority of votes, another ballot was necessary and that under the custom of the House the place receiving the lowest number should be eliminated.

The Secretary announced that the result of the second ballot was that, of 144 votes cast, San Francisco received 94 and St. Louis 50.

The Speaker resumed the Chair and declared that the House of Delegates had selected San Francisco in which to hold the 1943 annual session of the American Medical Association.

Resolution Expressing Appreciation

Dr. Arthur W. Booth, Chairman, Board of Trustees, presented the following resolution, which, on motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. John Z. Brown, Utah, and carried, was adopted by a rising vote:

WHEREAS, The Ninety-First Annual Session of the American Medical Association held in New York in 1940 has already exceeded in total registration 11,700, the largest number by far ever in attendance at any medical convention in the world; and

WHEREAS, The facilities for housing the membership, for their entertainment, for holding scientific sessions and for the general work of the session have been exceptional in quantity and in quality; and

WHEREAS, The opportunity for dissemination of information arising from this annual session, including the general press and periodicals, has been extraordinarily comprehensive, notwithstanding even the demands on space created by the world war; and

WHEREAS, The great radio broadcasting agencies and all of the local radio stations in the city of New York have been exceedingly generous of time in broadcasting to the city, the state and the nation the news of this annual session and have utilized their facilities also for health education to the public; and

WHEREAS, The technical and scientific exhibits, even though presented under some difficulties, have attracted thousands of physicians and are larger in quantity and superior in quality to any such expositions previously held; therefore be it

Resolved, That the House of Delegates of the American Medical Association expresses its appreciation specifically to the county and state medical societies of New York, to the Chamber of Commerce, to the association of hotels, to the press, to the radio and to the citizens of New York for the magnificent cooperation and generous hospitality extended to the physicians of the country on this occasion.

Votes of Appreciation

On motion of Dr. A. A. Herold, Louisiana, seconded and carried unanimously, a rising vote of appreciation was extended to Dr. Charles Gordon Heyd, Chairman of the Local Committee on Arrangements.

A rising vote of appreciation was extended to the Speaker and the Vice Speaker of the House of Delegates.

The House of Delegates adjourned sine die at 4:05 p. m., on motion of Dr. H. B. Everett, Tennessee, duly seconded and carried.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the New York session was shown for the forty-second time. There were 245 exhibits in all, 199 of which were presented under the auspices of the various sections, twenty-four in the exhibit symposium on heart disease and sixteen in the educational classification. There were three special exhibits subsidized by the Board of Trustees and three groups of motion pictures presented in conjunction with the different sections. More than 850 exhibitors, demonstrators and assistants took part in the Scientific Exhibit.

The Special Exhibit on Fractures was presented for the tenth time under the auspices of a committee composed of Dr. Kellogg Speed, Chicago, chairman; Dr. Frank D. Dickson, Kansas City, Mo., and Dr. Walter Estell Lee, Philadelphia. Dr. Henry H. Ritter, New York, served as local representative. Appreciation is expressed to Major General James Magee, Surgeon General United States Army, and Colonel F. W. Weed, Headquarters, Second Corps Area, Governors Island, New York, for assistance in furnishing personnel and material for the exhibit, and to the New York Postgraduate Hospital for furnishing two nurses —Miss Helen Behan and Miss Eileen Lombard. Fifty physicians assisted with demonstrations in six booths continuously throughout the week.

The Special Exhibit on Fresh Pathology was presented after a lapse of several years. Demonstrations took place continuously throughout the week showing fresh specimens from more than a hundred necropsies. A feature of the exhibit was the projection on a screen of interesting specimens with lectures several times a day. The committee in charge of the exhibit consisted of Dr. Harrison S. Martland, Newark, N. J., chairman; Dr. Gilbert J. Dalldorf, Valhalla, N. Y., and Dr. Milton Helpern, New York.

The Special Exhibit on Lame Backs was a new feature shown for the first time this year. A group of more than fifty physicians participated actively throughout the week in presenting the demonstrations, while a group of soldiers from the United States Army took part under the auspices of the Surgeon General. The committee in charge consisted of Dr. Frank R. Ober, Boston, chairman; Dr. Carl E. Badgley, Ann Arbor, Mich.; Dr. J. Archer O'Reilly, St. Louis; Dr. Arthur Steindler, Iowa City, and Dr. Philip D. Wilson, New York.

The Exhibit Symposium on Heart Disease and on Peripheral Vascular Disease was presented with the cooperation of the American Heart Association under the guidance of a committee composed of Dr. Thomas M. McMillan and Dr. Norman E. Freeman, Philadelphia.

The Exhibit Symposium on Nutrition was presented as part of the exhibit from the Section on Pediatrics.

Forty papers read before the various sections of the Scientific Assembly were correlated with the exhibits in the Scientific Exhibit.

The following physicians served as representatives in the Scientific Exhibit from the different sections of the Scientific Assembly:

Section on Practice of Medicine, Dr. Fred M. Smith, Iowa City.

Section on Surgery, General and Abdominal, Dr. Grover C. Penberthy, Detroit.

Section on Obstetrics and Gynecology, Dr. H. Close Hesseltine, Chicago.

Section on Ophthalmology, Dr. Georgiana Dvorak Theobald, Oak Park, Ill.

Section on Laryngology, Otology and Rhinology, Dr. Daniel S. Cunning, New York.

Section on Pediatrics, Dr. Arthur F. Abt, Chicago.

Section on Pharmacology and Therapeutics, Dr. Wallace M. Yater, Washington, D. C.

Section on Pathology and Physiology, Dr. F. W. Konzelmann, Philadelphia.

Section on Nervous and Mental Diseases, Dr. F. P. Moersch, Rochester, Minn.

Section on Dermatology and Syphilology, Dr. Hamilton Montgomery, Rochester, Minn.

Section on Preventive and Industrial Medicine and Public Health, Dr. Paul A. Davis, Akron, Ohio.

Section on Urology, Dr. John H. Morrissey, New York.

Section on Orthopedic Surgery, Dr. Mather Cleveland, New York.

Section on Gastro-Enterology and Proctology, Dr. Sara M. Jordan, Boston.

Section on Radiology, Dr. S. W. Donaldson, Ann Arbor, Mich.

Section on Miscellaneous Topics, Session on Anesthesia, Dr. Henry S. Ruth, Merion, Pa.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

GROUP I

(Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.)

The GOLD MEDAL to Charles B. Huggins, Phillip Clark and W. W. Scott, University of Chicago, Chicago, for exhibit illustrating experimental benign hypertrophy of the prostate in the dog.

The SILVER MEDAL to John R. Paul and James D. Trask, Yale University School of Medicine, New Haven, Conn., for exhibit illustrating a rural epidemic of poliomyelitis; clinical and geographic features.

The BRONZE MEDAL to Charles F. Nelson and Roland C. Nelson, the Nelson Clinic, Beverly Hills, Calif., for exhibit on bone metabolism.

CERTIFICATES OF MERIT, Group I, are awarded to the following (alphabetically arranged):

E. E. Barksdale, Danville, Va., for exhibit illustrating cutaneous manifestation from tobacco with special reference to arsenical exfoliative dermatitis.

A. E. Bennett, A. R. McIntyre and A. L. Bennett, University of Nebraska College of Medicine, Omaha, for exhibit illustrating pharmacologic and clinical investigations with crude curare.

Frederick A. Gibbs, W. G. Lennox and A. M. Grass, Boston City Hospital, Boston, for exhibit illustrating recent advances in electro-encephalography.

F. W. Hartman, Roy D. McClure, J. G. Schnedorf and Victor Schelling, Henry Ford Hospital, Detroit, for exhibit illustrating anoxia as related to anesthesia: production, prevention, treatment and pathology.

Icie Macy-Hoobler, Detroit, for exhibit illustrating chemistry of growth and nutrition in childhood.

L. S. Stone and Frederick A. Wies, Yale University School of Medicine, New Haven, for exhibit illustrating return of vision in the vertebrate eye following repeated transplantations.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of Norman W. Elton, Millard Fillmore Hospital, Buffalo, on the defective scar of high cesarean section.

That of Reuben L. Kahn, Ann Arbor, Mich., on the detection of false positive reactions in serodiagnosis of syphilis.

That of W. J. MacNeal, Martha Jane Spence and Marie Wasseen, New York, on experimental endocarditis induced by intravenous inoculation of Streptococcus viridans.

That of Frank L. Meleney and Elizabeth Spofford, New York, on chronic undermining burrowing ulcers and progressive bacterial synergistic gangrene before and after treatment with zinc peroxide.

That of Louis Schwartz, National Institute of Health, Bethesda, Md., Edward A. Oliver, Chicago, and Leon H. Warren, National Institute of Health, Bethesda, Md., on occupational leukoderma.

That of William Firth Wells, University of Pennsylvania School of Medicine, and Max B. Lurie, Henry Phipps Institute, Philadelphia, on experimental air-borne disease.

GROUP II

(Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation and correlation of facts.)

The GOLD MEDAL to Norman Treves, Memorial Hospital, New York, for exhibit illustrating the significance of the bleeding nipple.

The SILVER MEDAL to A. H. Logan, P. W. Brown, J. A. Bargen, H. M. Weber, L. A. Buie, H. H. Bowing, A. H. Baggenstoss, C. F. Dixon, J. deJ. Pemberton and C. W. Mayo, Mayo Clinic, Rochester, Minn., for exhibit on polyps of rectum and colon and illustrating what can be done about them.

The BRONZE MEDAL to W. H. Wright, National Institute of Health, Washington, D. C., for exhibit illustrating the public health aspects of trichinosis.

CERTIFICATES OF MERIT, Group II, are awarded to the following (alphabetically arranged):

Rhoda W. Benham and Edward D. DeLamater, Columbia University, New York, for exhibit illustrating yeastlike parasites of the skin; Candida (Monilia), Cryptococcus, Pityrosporum.

F. H. Falls, University of Illinois, and Charlotte S. Holt, Illinois State Department of Public Health, Chicago, for exhibit illustrating ectopic pregnancy.

R. K. Ghormley, E. F. Rosenberg and P. S. Hench, Mayo Clinic, Rochester, Minn., for exhibit illustrating types of rheumatic diseases.

R. K. Gilchrist, Chicago, for exhibit illustrating surgical pathologic studies of carcinoma of the rectum and colon.

S. W. Harrington, Mayo Clinic, Rochester, Minn., for exhibit illustrating carcinoma of the breast.

Arnold S. Jackson, Madison, Wis., for exhibit illustrating goiter and other diseases of the thyroid gland.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of David I. Abramson and Fanny A. Senior, May Institute for Medical Research, Jewish Hospital, Cincinnati, for exhibit illustrating plethysmographic method for the study of blood flow and vascular responses in the extremities.

That of Alfred Angrist, Jamaica, N. Y., and Richard Grimes, Forest Hills, N. Y., for exhibit demonstrating forms of intracranial hemorrhage.

That of Joseph C. Gemeroy, Henry Ford Hospital, Detroit, for exhibit on stereoscopic photographs of the eye.

That of E. S. Gurdjian, Detroit, for exhibit illustrating surgical management and surgical pathology of acute head injury; problem of fluid intake, sedatives and narcotics.

That of Robert K. Lambert, New York, for exhibit illustrating significant structural features of the ocular circulation.

That of Irvine H. Page, K. G. Kohlstaedt, A. C. Corcoran, O. M. Helmer, P. J. Fouts and G. F. Kempf, Indianapolis City Hospital, Indianapolis, for exhibit illustrating nature of hypertension.

EDUCATIONAL CLASSIFICATION

A Special Certificate of Merit is awarded to the American Society of Anesthetists, New York, for its exhibit on anesthesiology—historical development.

SUBSIDIZED EXHIBITS

The Committee on Awards commends highly the special exhibits on fractures, fresh pathology and lame backs sponsored by the American Medical Association. The large and interested audience at these exhibits is an indication of the need for such exhibits, the care taken in their preparation and the excellence in the method of presentation.

RECOMMENDATIONS

It is recommended that increased facilities be provided for the projection of sound as well as silent pictures, if possible, and that consideration be given to awards for motion pictures as a separate feature.

It is recommended that the Educational Classification be discontinued so that a larger number of individual exhibitors may be accommodated. Certain of such organizations may still be included in the appropriate section under the name of the individual exhibitor.

COMMENTS

This year the Committee on Awards has had unusual difficulty in deciding on the awards because of the exceptionally large number of excellent exhibits.

The increasing excellence of the Scientific Exhibit speaks for the care in the selection of exhibit representatives. This should be continued in order to secure the proper correlation of the Scientific Exhibit with the Scientific Assembly, and in order thoroughly to canvass the field for the most excellent materials.

This year the space available has been adequate under the circumstances and it is hoped that in succeeding years this may continue. Other arrangements, such as ready access to the Scientific Exhibit with adequate entrances and exits, are important and conduce to the readiness with which the message will be delivered to the visiting physician. This is emphasized in view of the unanimity of opinion in medical circles that the Scientific Exhibit is the most valuable feature of the entire annual session.

The attention of the Trustees is called to the fact that, in the Scientific Exhibit, the opportunity is provided for discovering exhibits which will be suitable for traveling exhibits for the state societies.

The Committee is also impressed with the cooperation of the Committee on Scientific Exhibit of the Board of Trustees and the Advisory Committee. The unfailing help of Dr. Thomas G. Hull, Director of the Scientific Exhibit, has been an inspiration to the undersigned.

FRED D. WEIDMAN, Philadelphia, Chairman.
HOWARD M. CLUTE, Boston.
WILLIAM S. MCCANN, Rochester, N. Y.
I. C. RIGGIN, Richmond, Va.
WALTER M. SIMPSON, Dayton, Ohio.

REGISTRATION AT NEW YORK

The total registration at the New York session was 12,864. Below are summaries of the registration by sections and by states:

Registration by Sections

Practice of Medicine	4,338
Surgery, General and Abdominal	1,754
Obstetrics and Gynecology	864
Ophthalmology	601
Laryngology, Otology and Rhinology	509
Pediatrics	737
Pharmacology and Therapeutics	67
Pathology and Physiology	378
Nervous and Mental Diseases	409
Dermatology and Syphilology	422
Preventive and Industrial Medicine and Public Health	287
Urology	340
Orthopedic Surgery	376
Gastro-Enterology and Proctology	327
Radiology	452
Miscellaneous Topics: Session on Anesthesia	157
Two or more sections or no section marked	846
Total	12,864

Registration by States

Alabama	56	New Hampshire	39
Arizona	25	New Jersey	1,357
Arkansas	17	New Mexico	6
California	208	New York	5,223
Colorado	60	North Carolina	131
Connecticut	427	North Dakota	13
Delaware	41	Ohio	456
District of Columbia	206	Oklahoma	48
Florida	100	Oregon	23
Georgia	81	Pennsylvania	1,279
Idaho	8	Rhode Island	65
Illinois	484	South Carolina	57
Indiana	162	South Dakota	6
Iowa	70	Tennessee	64
Kansas	24	Texas	123
Kentucky	71	Utah	16
Louisiana	52	Vermont	21
Maine	32	Virginia	172
Maryland	196	Washington	34
Massachusetts	489	West Virginia	80
Michigan	243	Wisconsin	104
Minnesota	131	Wyoming	2
Mississippi	11	Miscellaneous	156
Missouri	138		
Montana	8	Total	12,864
Nebraska	49		

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

COLORADO

Midsummer Radiologic Conference.—The Denver Radiological Club will hold its annual midsummer radiologic conference at the Hotel Shirley Savoy, Denver, August 8-10.

Society News.—Dr. Herbert A. Black, Pueblo, discussed carcinoma of the cervix before the Otero County Medical Society at a recent meeting in La Junta.——Dr. Franklin G. Ebaugh, Denver, discussed insanity before the Fremont County Medical Society in Florence recently.——At a meeting of the Pueblo County Medical Society, Pueblo, May 21, Dr. Wilbur Lowe spoke on "Rectal Prolapse—Procidentia and Merits of Injection Treatment."

ILLINOIS

Personal.—Dr. Felix W. Sokolowski has resigned as managing officer of the Alton State Hospital, effective May 1, it is reported. He will devote all his time to private practice. Dr. Edward Ross, Chicago, became acting managing officer.

Course for Medical Officers.—A two months' postgraduate course in cardiovascular disease for medical officers of the Veterans Administration was recently given at Hines. Participating were:

Dr. Louis N. Katz, April 4, Clinical Value of the Electrocardiogram.
Dr. Emmett B. Bay, April 18, Hydraulics of the Circulation.
Dr. James G. Carr, April 25, Arteriosclerotic Heart Disease.
Dr. Andrew C. Ivy, May 2, Physiological Aspects of Hypertension.
Dr. Geza de Takats, May 16, Peripheral Vascular Disease.

Chicago

Course on Electrocardiography.—The cardiovascular department of Michael Reese Hospital announces a full time course in electrocardiography, August 19-31, under the direction of Dr. Louis N. Katz.

New Officers of Chicago Medical Society.—Dr. James P. Simonds has been named president-elect of the Chicago Medical Society and Dr. Frank F. Maple installed as president of the society. The ninetieth annual meeting and dinner of the society, June 25, was addressed by the outgoing president, Dr. Nathan S. Davis III, and by Dr. William Allen Pusey on "The First Ninety Years of the Society."

Dr. Kyes Made Professor Emeritus.—Dr. Preston Kyes, since 1918 professor of preventive medicine, School of Medicine of the University of Chicago, will become professor emeritus July 1. Dr. Kyes was born at North Jay, Maine, in 1875. He graduated at Johns Hopkins University School of Medicine, Baltimore, in 1900. He was a fellow of the Rockefeller Institute for Medical Research, New York, from 1902 to 1905; associate in the Chicago Memorial Institute for Infectious Diseases, 1904-1909, and Royal Prussian Institute of Experimental Therapy at Frankfort-on-the-Main, Germany, 1901-1905. He has been associated with the University of Chicago since 1902.

Courses in Obstetrics and Pediatrics.—A series of one week courses in obstetrics and pediatrics will begin, July 8, at the University of Illinois College of Medicine, Chicago. Lecturers will include:

Dr. Frederick H. Falls, professor of obstetrics and gynecology, University of Illinois College of Medicine.
Dr. Edwin M. Miller, clinical professor of surgery, Rush Medical College.
Dr. Albert H. Montgomery, chief surgeon, Children's Memorial Hospital.
Dr. Joseph L. Baer, clinical professor of obstetrics and gynecology at Rush.
Dr. Francis E. Senear, professor of dermatology at Illinois.
Dr. Clark W. Finnerud, assistant professor of dermatology at Rush.
Dr. William J. Dieckmann, associate professor of obstetrics and gynecology, School of Medicine, University of Chicago.
Dr. Tell Nelson, associate in medicine at Illinois.
Dr. Ben Z. Rappaport, associate in medicine at Illinois.

Information may be obtained from Mr. G. R. Moon, registrar, University of Illinois College of Medicine, 1853 West Polk Street.

MARYLAND

Portrait of Dr. Hunner.—Dr. Guy L. Hunner, since 1932 adjunct professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, was honored recently when a group of workers from the department of gynecology presented a portrait of him to the university. It was the work of his daughter, Mrs. John Parsons. Dr. Hunner graduated at Johns Hopkins in 1897 and has been on its faculty since 1902.

Annual Health Conference.—The twentieth annual health conference of the field and departmental staffs of the state department of health was held in Baltimore, May 3. Speakers included:

Drs. Perrin H. Long and Horace L. Hodes, Baltimore, Use of Sulfapyridine in Treatment of Disease.
Dr. Lloyd D. Felton, Washington, D. C., Studies on Immunization Against Pneumonia.
Ira V. Hiscock, Sc.D., New Haven, Conn., Public Health Education and Its Place in a Community Health Program.
Dr. Charles H. Peckham Jr., Baltimore, Preliminary Report Based on a Study of 1,500 Births on the Obstetrical Care Available to Rural Mothers in Maryland.
Arthur W. Hedrich, Sc.D., Baltimore, Results of a Statewide Test of Birth Registration in Maryland.
Dr. Austin V. Deibert, Baltimore, The State Venereal Disease Program for 1939.

MASSACHUSETTS

State Child Guidance Clinics.—Two new child guidance clinics have been established through the efforts of the Massachusetts Society for Mental Hygiene and the cooperation of the division of mental hygiene of the state department of mental health. One is in Hamilton and the other in Marblehead. Because of the special interest of the schools in these towns, the clinics are housed in the Jonathan Lamson School in Hamilton and in the Junior High School in Marblehead, according to the *Monthly Bulletin* of the state society for mental hygiene.

Director for Infantile Paralysis Clinic.—Dr. William T. Green, assistant professor of orthopedic surgery, Harvard Medical School, Boston, has been made director of the aftercare clinic of the Harvard Infantile Paralysis Commission, effective June 1. Dr. Green will have charge of one of the two main divisions of the scientific work of the commission. Located in the Children's Hospital, the clinic cares for about 1,400 children annually and conducts investigations of methods of treatment of infantile paralysis and of its after-effects. Dr. William Lloyd Aycock, assistant professor of preventive medicine and hygiene, Harvard Medical School, is in charge of the commission's division of laboratory research, including study of the causation and epidemiology of the disease. The commission was established by the Harvard Corporation in 1916. It is supported entirely by public subscription and receives no financial aid from the university. Besides supporting laboratory and clinical research, the commission also acts in an advisory capacity to the Massachusetts Department of Health and cooperates with the Vermont Board of Health.

MICHIGAN

New Building for State Health Department.—The Michigan State Department of Health plans to begin, July 1, the construction of a new four story building in northwest Lansing in conjunction with its central laboratories. WPA funds totaling $64,999 and a state appropriation of $50,000 will be used toward financing the building.

MINNESOTA

Personal.—Dr. Charles E. Rea has resigned as assistant professor of surgery at the University of Minnesota Medical School, Minneapolis, to enter private practice in St. Paul.——Dr. Russell R. Heim, Minneapolis, has been appointed health commissioner of Hennepin County, succeeding the late Dr. Thomas T. Warham.——Dr. Frederick W. Hoffbauer, Minneapolis, has been appointed physician on the staff of the health service of the University of Minnesota, effective September 16.——Dr. Charles L. Scofield, Benson, recently observed two anniversaries, one his seventy-fifth birthday and the other his completion of fifty years in the practice of medicine. He has been a member of the state board of health for twelve years, serving four years as president.

MISSISSIPPI

Health Department Activities.—A health department has been established in Marion County with Dr. Ralph Sneed, University, as director. Dr. Alton R. Perry, Laurel, has resigned as director of the unit in Jones County; he has held the office since the department's establishment in 1937. Dr. Ransom J. Jones, Poplarville, has been appointed director of the Leflore County Health Department; he has been in charge of

the southeastern health district, composed of George, Greene, Stone and Perry counties. He will be succeeded in the latter position by Dr. Edwin H. West, Purvis. Dr. Byron O. Garner, Greenwood, acting officer in Leflore County, has been made full time director in Noxubee County. Dr. James H. White, Corinth, acting health officer in Alcorn County, has been placed on a full time basis. Dr. Lynn D. Abernethy, Grenada, has been made director of health in Marshall County, relieving Dr. John W. Dugger, who had been acting health officer since the resignation of Dr. John W. Dorman, Dyess, Ark. Dr. Murphy M. Sims, Lexington, acting director of Holmes County, has been appointed health officer of Lafayette County, succeeding Dr. James H. Armstrong, Oxford, who resigned to enter private practice.

NEVADA

Plague Infection.—According to *Public Health Reports*, plague infection was proved in tissue from two ground squirrels, Citellus beldingi oregonus, found dead, April 18, on ranches 6 and 10 miles, respectively, northeast of Lamoille; in a pool of twenty fleas from six ground squirrels of the same species, shot on the same date, on a ranch 8 miles northeast of Lamoille, and in tissue from one ground squirrel, Citellus richardsoni nevadensis, also shot, April 18, on a ranch 5 miles west of Wells. All localities mentioned are in Elko County.

NEW YORK

Appointments to Health Council.—Dr. L. Whittington Gorham, Albany, has been appointed a member of the New York State Public Health Council to fill the vacancy created by the death of Dr. Livingston Farrand. The term will expire Dec. 31, 1942. Dr. Walter A. Leonard, Cambridge, was reappointed for a six year term.

Personal.—Dr. Arthur J. Bedell, Albany, received the honorary degree of doctor of laws at the annual commencement of St. Bonaventure's college, Alleghany, June 4.——Benjamin H. Willier, Ph.D., head of the division of biological sciences, University of Rochester, since 1933, has been appointed Henry Walters professor of zoology at Johns Hopkins University, Baltimore.

Infirmary Named for School Physician.—A new infirmary at Vassar College, Poughkeepsie, was named Baldwin House in honor of Dr. Jane North Baldwin, chairman of the department of health and hygiene, during dedicatory ceremonies, May 25. A tablet on the facade was unveiled by Dr. William Darrach, dean emeritus and professor of clinical surgery, at the Columbia University College of Physicians and Surgeons. Dr. Baldwin graduated at Cornell University Medical School in 1900. In 1905 she joined the medical staff at Vassar College, becoming its head in 1929. The new infirmary has a capacity of thirty-five beds.

New York City

Military Clinical Conference.—The Metropolitan New York chapter and the New Jersey chapter of the Association of Military Surgeons of the United States held a clinical conference for medicomilitary officer personnel at the United States Marine Hospital, Stapleton, June 22. Clinical presentations were made on coronary diseases, diseases of the genito-urinary tract and gastric ulcers. Dr. Charles W. Naulty Jr., Perth Amboy, N. J., was in charge of arrangements.

Annual Graduate Fortnight.—The New York Academy of Medicine will present its annual graduate fortnight October 14-25. The theme of the meeting will be infections, with panel discussions, afternoon clinics, clinical demonstrations, evening addresses and appropriate exhibits making up the program. The purpose of the fortnight is to make a complete study and authoritative presentation of a subject of importance in the practice of medicine and surgery. A complete program and registration blank may be obtained from Dr. Mahlon Ashford, New York Academy of Medicine, 2 East One Hundred and Third Street.

Society News.—Speakers at a meeting of the New York Roentgen Society, May 20, included Drs. Lucien M. Pascucci on "Roentgen Therapy in Leukemia; Survival Period and Reaction of Spleen and Nodes" and Jacob R. Freid, "Pulmonary and Skeletal Metastases from Cancer of the Kidney, Prostate and Bladder."——Dr. William A. Antopol, Newark, N. J., among others, addressed the New York Pathological Society, May 23, on "Experimental Aspects of Heparin-Sulfapyridine in Massive Urolithiasis."——Dr. Grant P. Pennoyer addressed the New York Surgical Society, May 8, on "Peripheral Arterial Disease."——Dr. Albert D. Kaiser, Rochester, N. Y., addressed the Bronx County Medical Society, May 15, on "Role of the Tonsils in Health and Disease."——Dr. Geza Weitzner, among others, addressed the Bronx Gynecological and Obstetrical Society, May 27, on "Treatment of Gonorrheal Salpingitis with Estrogenic Hormones."

Report of County Library.—The directing librarian of the Library of the Medical Society of the County of Kings and the Academy of Medicine of Brooklyn in his annual report stated that the library has filled all its available space. During the year it was necessary to shorten the time when the library was open to nonmembers. This resulted in a decrease of readers using the library from 17,055 in 1938 to 14,708 in 1939, yet the number of books consulted increased by 669 and the number taken out for home use decreased 2,239. This library, fourth in size of the medical libraries of the country outside of the Surgeon General's library, receives financial assistance from numerous medical societies, some dental societies and several other organizations, as well as many individuals who donate books, journals and funds. During 1939 the library added 835 volumes. It also purchased 807 volumes of periodical publications or back files. The total number of current periodicals and serial publications now on file is 1,566, the report said. Conditions abroad have affected the receipt of current journals. Periodicals formerly received from Spain had not resumed coming to the library at the time of the report; no Polish journals had arrived since August 1939. Some French and German journals were being received irregularly.

NORTH CAROLINA

Research Fellowship in Zoology.—Establishment of the Charles W. Hargitt Research Fellowship in zoology at Duke University, Durham, is announced. The fellowship was made possible by a bequest in the will of the late Charles Wesley Hargitt, Ph.D., for many years research professor of zoology at Syracuse University, Syracuse, N. Y., who died in 1927. It is expected that the fellowship will be granted in 1941 for research in cytology. Dr. Hargitt's son, George T. Hargitt, Ph.D., is professor of zoology at Duke.

Society News.—At a meeting of the Thermal Belt Medical Society in Marion recently the speakers were Drs. Isaac A. Phifer Jr., Spartanburg, S. C., on "The Gonorrheal Problem"; Paul T. McBee, Marion, "Middle Meningeal Hemorrhage"; John C. Hamrick, Shelby, "Sutures and Suture Materials" and John W. Austin Woody, Tryon, "Maternal Health Program in Polk County."——Drs. Charles F. Glenn and Ben E. Washburn, Rutherfordton, recently addressed the Rutherford County Medical Society on "Chronic Cystic Mastitis" and "Public Health Activities in the Caribbean Region," respectively.

OHIO

Grants at Western Reserve.—The John and Mary R. Markle Foundation of New York has appropriated $4,100 for the continuation of studies of the "Cause and Treatment of Ventricular Fibrillation" at Western Reserve University School of Medicine, Cleveland. Studies have been in progress for a year at the school and the results justify a further pursuit of the work. The Commonwealth Fund of New York has given $17,900 to the school for a three year program of studies of extracardiac factors of circulation, the part which the blood vessels play in the blood flow, particularly in failure of the circulation in surgical shock and similar conditions. Both studies are under the direction of Dr. Carl J. Wiggers, professor of physiology at the school. The Markle Foundation has made a grant of $2,000 to the school to support an investigation of intravenous bismuth injections by Drs. Torald H. Sollmann, professor of pharmacology and materia medica, dean and executive officer, and Joseph Seifter, senior instructor in pharmacology.

PENNSYLVANIA

Society News.—Dr. Holbert J. Nixon, Uniontown, discussed toxemias of late pregnancy before the Fayette County Medical Society in Uniontown, June 6.——Dr. Leo D. O'Donnell, Pittsburgh, discussed "Diagnosis and Treatment of Gallbladder Disease" before the McKean County Medical Society in Bradford, May 21.——Dr. Ralph M. Tyson, Philadelphia, addressed the Blair County Medical Society in Altoona, May 28, on "Blood Disorders in Infancy and Childhood."

Philadelphia

University News.—The Van Lennep Surgical Society of the Hahnemann Medical College of Philadelphia presented Dr. William F. Rienhoff Jr., Baltimore, in a lecture for students and physicians recently at the college. Dr. Rienhoff's subject was "The Present Status of the Surgical Treatment of Carcinoma of the Lung."

Annual Health Award.—The second annual award of the Pennsylvania Public Health Association this year went to Dr. Henry Field Smyth, assistant professor of industrial hygiene, University of Pennsylvania School of Medicine, and Arthur M. Dewees, executive secretary of the Pennsylvania Tuberculosis Association since 1919, for achievements in public health. At the fifteenth annual meeting of the association, May 24, when the award was presented, Harry B. Meller, Pittsburgh, was chosen president-elect and Dr. Paul A. Keeney, Harrisburg, was installed as president.

Society News.—A symposium on tuberculosis was presented before the Philadelphia Pediatric Society, May 14, by Drs. Miriam E. Brailey, Baltimore; Esmond R. Long, Philadelphia; Richard H. Smith, U. S. Public Health Service, and Josephine Shefner, R.N., U. S. Indian Service.——At a meeting of the Philadelphia Neurological Society, May 24, the speakers were Drs. Ernest A. Spiegel on "Rhythmic Stimulation of the Labyrinth"; Hymen Edward Yasskin, Camden, N. J., "Rickettsial Meningo-Encephalomyelitis," and Howard A. Howe, Baltimore, "Experimental Studies on Poliomyelitis."——The Philadelphia and New York urological societies held a joint meeting at Jefferson Medical College of Philadelphia recently. The speakers included Drs. Virgil H. Moon, on "Early Recognition of Shock and Its Differentiation from Hemorrhage"; Paul R. Leberman, "Studies on the Pathology of the Human Renal Papilla"; Patrick Boland Hughes, "Renal Aspects of Hypertension"; Alexander Randall, "Proof of Origin of Growth of Three Different Chemical Types of Renal Calculi," and Arthur M. Walker, "Further Experiments on Localization of Function Within the Renal Tubule."

SOUTH CAROLINA

Society News.—Dr. James E. Paullin, Atlanta, Ga., addressed the Columbia Medical Society, May 13, on "Congestive Heart Failure."——Drs. Eugene M. Landis, Richmond, Va., and Staige D. Blackford, Charlottesville, Va., addressed the Greenville County Medical Society, Greenville, May 13, on "Pathogenesis and Treatment of Edema" and "Spontaneous Pneumothorax" respectively.

Course in Obstetrics and Pediatrics.—The Medical College of the State of South Carolina has arranged for a program of instruction in obstetrics and pediatrics for South Carolina physicians. Four physicians will be taken at a time for two weeks of ward rounds and clinics with the college staff. Arrangements are made through the maternal and child health division of the state board of health.

Appointments to State Medical Board.—New appointments to the state board of medical examiners include the following: Dr. George C. Brown Jr., Walterboro, to succeed Dr. Daniel L. Maguire, resigned; Dr. Wilbur R. Tuten, Fairfax, succeeding the late Dr. Josiah S. Matthews, Denmark; Drs. Enoch M. Dibble, Marion, and Albert Earle Boozer, Columbia, were reappointed, newspapers reported.

TENNESSEE

Medical Section in Chattanooga Library.—A room to be known as the "Medical Section of the Chattanooga Public Library" is being arranged through a gift of funds and books by the Chattanooga and Hamilton County Medical Society. A collection of approximately 1,000 books and bound magazines and a large file of unbound magazines have been given to the library by the society as a nucleus of a medical library. Equipment and furniture are being provided by the library.

TEXAS

Personal.—Dr. James E. Peavy Jr., Austin, recently became director of the health unit for San Augustine and Sabine counties.——Dr. Samuel D. Whitten, Greenville, has been appointed health officer of Hunt County to succeed Dr. Lemuel E. Gee, resigned.——Dr. John W. Spies, dean and professor of public health, University of Texas School of Medicine, Galveston, was recently elected to the Royal Society of Tropical Medicine and Hygiene in London, according to the *Texas State Journal of Medicine*.——A group of women in San Benito recently honored Dr. Clarence M. Cash by dedicating a room in the Valley Baptist Hospital, Harlingen, in his name, in recognition of his professional services in the last forty years. Dr. Cash received a portfolio of pictures of children whose birth he had attended.

Annual Interns' Night.—The Tarrant County Medical Society instituted an annual interns' night at its regular meeting in Fort Worth, May 22. The program consisted of papers entered in the annual case report contest conducted among residents and interns of the five Fort Worth general hospitals. The first prize of $15 was awarded to Dr. Richard G. Scobee, a recent graduate of the University of Texas School of Medicine, Galveston, an intern at Harris Memorial Methodist Hospital. His paper was entitled "Ectopic Pregnancy." The second prize of $10 went to Dr. William D. Sedgwick, a graduate of the University of Tennessee College of Medicine, Memphis, and an intern at City-County Hospital, Fort Worth, for a paper on "Hyperglycemia and Glycosuria in Coronary Thrombosis." Honorable mention was given to Dr. James E. McConnell, a graduate of Louisiana State University School of Medicine and an intern at Harris Memorial Methodist Hospital, for a paper entitled "Acute Streptococcus Viridans Endocarditis." The winning papers will be published in the *Tarrant Medical Bulletin*.

VERMONT

Postgraduate Course for Ophthalmologists.—The College of Medicine of the University of Vermont, Burlington, held a postgraduate course for ophthalmologists in neuromuscular anomalies of the eye during the week of June 17. The sessions were held in the medical college building. The course was under the direction of the department of ophthalmology and otolaryngology, and the instructor was Dr. George P. Guibor, associate attending ophthalmologist at the Children's Memorial Hospital, Chicago.

WASHINGTON

Poliomyelitis in Tacoma.—An outbreak of poliomyelitis in Tacoma and Pierce County was reported in *Northwest Medicine* for June. Fifteen cases with four deaths had occurred up to May 21. Dr. Edward C. Rosenow, Rochester, Minn., addressed the Pierce County Medical Society, May 27, on poliomyelitis.

University of Washington Graduate Course.—The twenty-fourth annual graduate medical course at the University of Washington, Seattle, will be held July 15-19. The faculty will be:

Dr. Soma Weiss, Hersey professor of theory and practice of physic, Harvard Medical School, Boston, for medical topics.
Dr. Charles F. McKhann, associate professor of pediatrics and communicable diseases, Harvard Medical School, Boston, pediatrics.
Dr. Richard B. Cattell, the Lahey Clinic, Boston, surgery.
Chauncey Leake, Ph.D., professor of pharmacology, University of California, San Francisco, pharmacology.

Tickets may be purchased by mail from the Extension Division, Lewis Hall, University of Washington. The fee is $10.

PUERTO RICO

University News.—Dr. Ramon M. Suarez, associate professor of tropical medicine in the School of Tropical Medicine at the University of Puerto Rico under the auspices of Columbia University, San Juan, has been made head of the department of clinical medicine. Dr. Albert V. Hardy, assistant professor of epidemiology, De Lamar Institute of Public Health, Columbia University, New York, was in Puerto Rico recently arranging for the establishment of a school of public health in the School of Tropical Medicine. It is expected that the school will open in September.

GENERAL

W. W. Buffum Dies.—Mr. William W. Buffum, treasurer and general manager of the Chemical Foundation, New York, since 1921, died at his home in Montclair, N. J., June 22, after a brief illness. He was 51 years old and a native of Pennsylvania. In 1917 Mr. Buffum joined the staff of the Alien Property Custodian in Washington, D. C., of which the late Mr. Francis P. Garvan, later president of the Chemical Foundation, was the head. Through his position with the foundation Mr. Buffum was business manager of the *American Journal of Cancer*, the *Journal of Clinical Investigation* and the *Sewage Works Journal*. At one time he was treasurer of the American Institute of Physics.

Examination in Obstetrics and Gynecology.—The next written examination and review of case histories (part I) for group B candidates of the American Board of Obstetrics and Gynecology will be held in various cities of the United States and Canada, Jan. 4, 1941. Candidates who successfully complete these examinations proceed automatically to the part II examinations held later in the year. Applications for admission to group B, part I, examinations must be on file in the secretary's office not later than October 5. The general oral and pathologic examinations (part II) for all candidates (groups A and B) will be conducted by the entire board, meeting at Cleveland immediately prior to the 1941 session of the American

Medical Association. After Jan. 1, 1942, there will be only one classification of candidates and all will be required to take part I and part II examinations. Further information and application blanks may be obtained from Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh (6), Pa.

Changes in Status of Licensure.—The California State Board of Medical Examiners has announced the following changes, among others:

Dr. Harry W. Boyd, now of Pittsburgh, license restored, February 26.
Dr. Charles W. Farley, Los Angeles, license revoked, February 29, for an alleged illegal operation.
Dr. Wendell O. Gregg, Los Angeles, placed on probation for five years, with a proviso that he does not practice from Feb. 27, 1940, until Jan. 1, 1941; that during the probation he abstain entirely from alcoholic beverages and that he shall not have in his possession a narcotic permit.
Dr. Yasuzo Karaki, Los Angeles, license revoked, February 29, for his conviction of a crime involving moral turpitude.
Dr. Eugene Curry Nelson, Los Angeles, license revoked, February 29, for an alleged illegal operation.
Dr. John Marshall Robinson Jr., Los Angeles, license revoked, February 29, for an alleged illegal operation.
Dr. Frederic Waitzfelder, Los Angeles, placed on probation for five years, February 27, without narcotic privileges.
Dr. James C. Weld, Los Angeles, license restored, February 26.

LATIN AMERICA

Personal.—Dr. José Arce, dean of the medical school of the University of Buenos Aires, recently spent a month visiting hospitals and medical schools in the United States.

Program to Control Whooping Cough.—At the request of Dr. José Zozaya, head of the National Serum Institute of Mexico, arrangements have been completed to organize a pertussis control program in the republic of Mexico under the direction of Pearl L. Kendrick, Sc.D., associate director of the Michigan Department of Health Laboratories. Dr. Kendrick, who directed the series of Michigan studies from 1934 to 1938, will assist the Mexican government for about six weeks this summer. The National Serum Institute of Mexico plans to provide a vaccine similar to that being used in Michigan and Dr. Kendrick will direct a study for checking its effectiveness in controlling the virulent type of whooping cough prevalent in Mexico, it was reported. The disease accounted for 2,000 deaths in the republic of Mexico last year and is said to be prevalent the year around.

Government Services

Chief Medical Officer Wanted

The U. S. Civil Service Commission has announced an open competitive examination to fill the position of chief of the medical division of the commission. It is urgent that the position be filled immediately. Applications will be received for only two weeks, the announcement said. Applications must be filed with the Washington office not later than July 8 if received from states east of Colorado and not later than July 11 if received from Colorado and states westward. The salary is $6,500 a year, less a retirement deduction of 3.5 per cent. Applicants must have been graduated with an M.D. degree from a medical school of recognized standing or must be licentiates of the National Board of Medical Examiners. In addition, they must have had highly responsible professional experience in the field of medicine, partly in a managerial or supervisory capacity. Applicants obtaining the highest ratings may be requested to appear for an oral examination. Should vacancies requiring similar qualifications occur in other government agencies, they may be filled from this examination. The duties of the chief of the medical division of the Civil Service Commission will be to direct a medical program more extensive than anything the commission has yet undertaken. He will be responsible for all steps taken by the commission to control physical standards and regulations for government employees and candidates for such employment. He will act as medical adviser to the commission, interpreting medical problems in programs concerning recruiting, employment and retirement, will cooperate with other government agencies in developing employment programs and policies and will keep in touch with medical schools, hospitals and professional associations in order to maintain the best recruiting standards and also to develop types of training calculated to serve better the needs of the government. Information and application forms may be obtained from the Secretary, Board of U. S. Civil Service Examiners, at any first or second class postoffice or from the Civil Service Commission, Washington, D. C.

Foreign Letters

PARIS

(From Our Regular Correspondent)

June 2, 1940.

Alcoholic Content of Wine

A committee recently authorized by the Academy of Medicine to study the danger of excessive use of wine reported that alcohol contained in wine was as injurious as distilled alcohol. Public opinion in France, however, sides with wine against alcohol and thinks that little toxicity inheres in wine because of its diluted state and that wine can be counted among wholesome beverages. Likewise powerful organizations, such as wine growers and distillers, have a great interest at stake. The report of the chairman of the committee, Lapicque, unanimously accepted by the academy, once more brings home not only to the public but to the different control agencies and the legislatures the fact that a liter of ordinary wine contains the equivalent of a glass of alcohol and that alcohol is injurious when daily consumption exceeds 100 cc. Strict regulation of alcoholic beverages was called for in the report, as well as the suppression of misleading advertising. Fourneau, supporting Lapicque's conclusions, pointed out that only one tenth of the alcohol imbibed was excreted by the lungs and kidneys. The remainder was oxidized in the body or rather dispersed to be oxidized and finally accumulated in the brain and the spinal fluid. When alcohol is taken in fractionated doses, a man weighing 70 Kg. (154 pounds) could oxidize 120 Gm. in twelve hours like other food. The rest remained stagnant in the tissues.

Radiopaque Injections in Bone Marrow

Raymond Benda recently presented to the Société médicale des hôpitaux of Paris the results achieved by injecting a radiopaque substance into the bone marrow of the sternum to study its vascular connections. He employed colloidal thorium dioxide. In the cadaver the roentgenogram regularly shows an area of opaque madreporic substance resembling coral reef, with the injection forming the center. Beyond, the opaque substances spread out in stellate lines with more or less curvature. The internal mammary veins are almost always invaded by the radiopaque fluid. Josefson in 1934 had tried a solution of iodine in poppyseed oil in vivo but had been unable afterward to find a trace of the injected material. Benda tried the same injection on two incurable patients, one with dementia paralytica, the other with inoperable carcinoma. The one was injected at the manubrium, the other at the sternal lamina situated at the third intercostal space. Unlike the x-ray observations in the cadaver, neither the intermediate areas nor the stellate lines were discoverable in man. The substance had spread about like small scattered grains, almost entirely within the interior of the sternum. It seems that the substance "had somehow been seized on its arrival in the bone marrow by cells in full activity." The complete harmlessness of the injections and the interest thus aroused justify further investigations.

Antitetanus Anatoxin

In about 40 per cent of adults treated with antitetanus serum, reactions are observed with one death in 50,000 vaccinations, in spite of the use of Besredka's method. Gaston Ramon on the one hand and Jeanneney, Saraste and Fauvert on the other presented the results obtained with tetanus anatoxin before a recent session of the Académie de chirurgie. In horses the anatoxin produces tetanus antitoxins. By means of the stimulating properties of certain substances such as tapioca, serums can be obtained within a few weeks whose titer attains to 4,000, 6,000 and 12,000 units, these serums containing from ten to

twenty times fewer proteins than is found in crude horse serum. Tetanus antitoxins retain their strength longer in this form than does raw horse serum. They possess one tenth of a unit strength after two weeks and do not disappear entirely at the end of a month. Denaturation by the combined action of formaldehyde and heat seems to confer on them qualities less foreign to the organism than raw horse serum. Anatoxin solutions in equivalent antitoxic values are less sensitizing than antitetanus horse serum. Reinoculated persons have fewer reactions, even those who have previously received an injection of raw horse serum. Jeanneney presented 153 cases in which anatoxin was employed prophylactically in recently wounded soldiers, fifty-two of whom (persons affected with asthma, urticaria or hepatic insufficiency) had been chosen because they were predisposed to anaphylactic reactions. In only 3⅓ per cent of these, slight accidents manifested themselves about the fifth day, whereas in a control group twenty cases of significant serum reactions were observed. The wounded can be given prophylactic injections simultaneously with antigangrene serum and in the vaccination of young recruits it can be combined with antidiphtheria anatoxin and antityphus vaccines.

BUENOS AIRES

(From Our Regular Correspondent)

May 17, 1940.

Cardiac Examination of School Children

In Buenos Aires 10,000 school children have recently been subjected to a circulatory examination. First, a general examination was made in the schools; children who had cardiac murmurs or other symptoms were then subjected to a careful clinical examination. It was found that 2.4 per cent of the children had organic heart lesions. It was hoped that by the early recognition of these circulatory disturbances better results would be obtainable when the children became adults. This represents an important social problem; the investigation was carried out in the Hospital Pirovano by Dr. A. Rucchelli and R. Gay together with the medical inspector, J. M. Macera.

The cardio-articular rheumatism of school children in Argentina is likewise to be regarded as a social problem. The internist Prof. Dr. Rafael A. Bullrich recently made an investigation and arrived at the following results: In England and in the Scandinavian countries, the mortality of children from this disease is higher than in other countries (from 3.6 to 4.5 per cent); in the United States it is estimated at 2.41 per cent. In Argentina, according to investigations of Macera and Costa Bertani in Buenos Aires, the mortality from this disease among children up to 15 years of age is 22 per cent; however, in Rosario, the second largest city of Argentina, it is, according to Sloer, 12.5 per cent among children of the ages from 4 to 15 (as it is in France). According to a communication of Senator Landaburu in the Argentine senate, 2.41 per cent of the children less than 14 years of age died as the result of this disease. Bullrich concludes that the ratio of morbidity and mortality of cardio-articular rheumatism of children, taken absolutely, as well as relatively to other infectious diseases, is as high in Argentina as in other countries, if not higher.

Medical Schools in the Argentine Republic

In the Argentine Republic all the universities are supported by the federal government. Of the six universities, four have faculties of medicine. These faculties comprise, besides the medical school, those of pharmacy and dentistry and some of them a school for midwives. There are 8,428 medical students (the population of the country is about 14 million); 545 new doctors graduated in 1939.

The B.A. degree is required for entrance in all the schools; those of Buenos Aires and La Plata also have an entrance examination. The course of studies varies from six to seven years, two or three of which are preclinical and four clinical. A thesis is also required by the medical school of Buenos Aires; the Rosario school requires a thesis and a course in history of medicine for the doctor's degree but gives a diploma permitting practice without these last requisites. The university diploma in all cases permits practice without further examinations. The number of students makes it necessary for them to take their practical work in large groups; in the preclinical years they attend the laboratories only about once a week. A limitation of the students to the capacity of the schools has often been requested by the professors, but politics has always stopped the measures necessary to put it through. In 1927 the medical school of Buenos Aires decided to limit the number entering but was overridden by the university council. The medical school in La Plata has in theory limited to 100 the number of students entering the first year, but in practice its laboratories and facilities are insufficient even for that number. There are only three full time professors in Buenos Aires, two in Rosario and two in Córdoba. A student may take examinations any number of times; these take place three times a year, so that with sufficient persistence students who are not really capable may graduate. The schools are governed by a council of eight professors elected by the full professors, four elected by the adjoint professors and three students elected by the students. In spite of so many unfavorable circumstances, in recent years there has been an increasing number of students and young doctors. The general welfare of the country has progressed and naturally has had a favorable influence on the universities.

Personals

Dr. J. A. Etchepareborda has been appointed acting director of the national department for hygiene.

The decease of Prof. E. P. Fidanza, who occupied the chair of dermatology at the school in Rosario, is greatly regretted. He was one of the most distinguished and active specialists in the country.

Brief Mention

The Pediatric Society of Uruguay (Sociedad uruguaya de pediatría) has celebrated its twenty-fifth anniversary.

The new anesthetic apparatus of Prof. José Arce has been transmitted to the president of the Royal Society of Medicine in London.

The Comité Franco-Argentino, organized to aid war victims, has presented twenty motorized ambulances to the French Red Cross.

Marriages

BENJAMIN OWEN RAVENEL, Baltimore, to Miss Evelyn Martin of Columbia, S. C., May 24.

JOHN BRISTOL GRAMLICH, New York, to Miss Eleanor Swift of Maplewood, N. J., May 11.

WALTER E. GOEHRING, Blair, Neb., to Miss Edith Cochrane of Butte, Mont., March 25.

ROBERT LEE PIERCY, Rochester, N. Y., to Miss Marjorie Nina Rouch of Ontario, May 5.

ROLAND I. PRITIKIN, Chicago, to Miss Jeanne Du Pre Moore of Rockford, Ill., May 25.

GEORGE D. WHITACRE, Springfield, Ohio, to Miss Mary Esther Robson in April.

ROBERT F. KAISER to Miss Marjorie Eileen Ferguson, both of Philadelphia, June 1.

RALPH MOSCHELLA to Miss Helen Holmesley, both of Statesville, N. C., April 8.

SANFORD RATHBUN, Cleveland, to Miss Mollie McIntyre of Omaha, April 27.

RALPH V. NICOSIA to Miss Ann Sheerin, both of Dayton, Ohio, March 27.

Deaths

Joannes Gregorius Dusser de Barenne, New Haven, Conn.; Universiteit van Amsterdam Geneeskunde Faculteit, Netherlands, 1909; instructor of physiology at the University of Amsterdam from 1909 to 1911; psychiatrist to the Meerenberg Asylum, Holland, from 1911 to 1914; lecturer in physiology at the University of Utrecht from 1919 to 1930; neurologist to St. Antonius Hospital, Utrecht, from 1919 to 1930; since 1930 Sterling professor of physiology at the Yale University School of Medicine; member of the American Physiological Society, American Society for Pharmacology and Experimental Therapeutics, Inc., British Physiological Society and Neurological Society of Amsterdam; on the editorial board of the *Journal of Neurophysiology;* aged 55; died, June 9, in the Deaconess Hospital, Boston, of coronary thrombosis.

William Thomas Coughlin ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1901; professor of surgery, St. Louis University School of Medicine; instructor in anatomy at his alma mater from 1901 to 1911; surgeon in chief of St. Mary's Group of Hospitals; consulting surgeon to the Jewish Hospital, St. John's Hospital and the City Hospital; member of the Western Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; served during the World War; editor of the American edition of Rose and Carless' "Manual of Surgery"; aged 67; died, May 22.

Charles Stover ⊕ Amsterdam, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1880; member of the House of Delegates of the American Medical Association in 1908 and 1910; past president of the Medical Society of the State of New York and the Medical Society of the County of Montgomery; city health officer from 1882 to 1889; on the staffs of the Amsterdam City and St. Mary's hospitals; for many years secretary of the Montgomery County Tuberculosis and Public Health Association; at one time secretary of the board of trustees of the New York State Hospital, Ray Brook; aged 89; died, April 9.

Joseph Edwards Kerney ⊕ Providence, R. I.; Yale University School of Medicine, New Haven, Conn., 1908; member of the American Urological Association; fellow of the American College of Surgeons; formerly associated with the United States Public Health Service; chief urologist, Rhode Island Hospital, Providence, and the Memorial Hospital, Pawtucket; attending urologist, St. Joseph's Hospital; consultant in urology, Charles V. Chapin and Miriam hospitals, Providence, Westerly (R. I.) Hospital, South County Hospital, Wakefield, and the state institutions, Howard; aged 58; died, May 4, of cerebral hemorrhage.

Henry Holdich Morton ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1882; since 1930 emeritus professor of urology at his alma mater; member of the American Association of Genito-Urinary Surgeons and the American Urological Association; fellow of the American College of Surgeons; on the staffs of the Long Island College Hospital, Kings County Hospital and St. Peter's Hospital; member of the committee on venereal diseases in the Surgeon General's Office during the World War; author of "Genito-Urinary Diseases and Syphilis" in five editions; aged 78; died, May 3, in Gulfport, Fla.

Richard Root Smith ⊕ Grand Rapids, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; member of the House of Delegates of the American Medical Association, 1911-1912; member of the American Gynecological Society; a founder and a governor of the American College of Surgeons; served during the World War; on the staff of the Blodgett Memorial Hospital; past president of the Michigan State Medical Society and the Kent County Medical Society; regent of the University of Michigan from 1931 to 1937; aged 70; died, May 7, of coronary thrombosis.

Edward John Angle ⊕ Lincoln, Neb.; Medical College of Ohio, Cincinnati, 1887; University of Pennsylvania Department of Medicine, Philadelphia, 1895; member of the American Urological Association and the American Academy of Dermatology and Syphilology; formerly professor of skin and genito-urinary diseases at the University of Nebraska College of Medicine; attending dermatologist to the Lincoln General Hospital and St. Elizabeth's Hospital; consulting dermatologist to the Bryan Memorial Hospital; aged 75; died, April 25.

James Wilson Hunter Jr. ⊕ Norfolk, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; fellow of the American College of Physicians; member of the American Roentgen Ray Society, Radiological Society of North America, Inc., and the American College of Radiology; past president of the Norfolk County Medical Society; served during the World War; on the staff of the Hospital of St. Vincent de Paul; aged 62; died, May 11, in the Army and Navy Hospital, Hot Springs National Park, Ark., of coronary occlusion.

James Morrison ⊕ Lynchburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1898; past president of the Lynchburg Academy of Medicine and the Virginia Society of Ophthalmology; on the staffs of the Lynchburg General Hospital, Marshall Lodge Memorial Hospital and Virginia Baptist Hospital, Lynchburg, and the State Colony for Epileptics and Feebleminded, Colony; aged 68; died, May 15, in the University of Virginia Hospital, Charlottesville.

John D. Miller ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1897; formerly clinical professor of gynecology at the University of Cincinnati College of Medicine; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; gynecologist to the Good Samaritan Hospital and Christ Hospital; consultant in gynecology at the Cincinnati General Hospital and the Deaconess Hospital; aged 64; died, May 18.

Donald MacKenzie Faulkner, Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1918; member of Medical Society of Virginia; associate professor of orthopedic surgery at the Medical College of Virginia; member of the American Academy of Orthopedic Surgeons; on the staff of the Crippled Children's Hospital; aged 47; died, May 6, when he fell from a window.

Joseph Stanley Maleski Miller, Collegeville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1917; member of the Medical Society of the State of Pennsylvania; served during the World War; on the staff of the Homeopathic Hospital, Pottstown; aged 45; died, April 1, in the Homeopathic Hospital of Chester County, West Chester, of chronic myelogenous leukemia.

Caesar Hirsch ⊕ Seattle; Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1909; member of the Medical Society of the State of New York and the American Academy of Ophthalmology and Otolaryngology; at one time adjunct professor of otology at the New York Polyclinic Medical School and Hospital, New York; aged 54; died, May 14.

William Wallace McKinley, Toronto, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1903; L.R.C.P., of Edinburgh, L.R.C.S., Edinburgh and Licentiate Royal Faculty of Physicians and Surgeons of Glasgow, 1908; formerly chairman of the school board of Port Hope; aged 66; died, April 21, in the Toronto General Hospital.

Otis Burgess Spalding ⊕ Lieutenant Commander, U. S. Navy, San Diego, Calif.; Cooper Medical College, San Francisco, 1898; entered the navy in 1921 and retired Jan. 1, 1940, because of ill health; fellow of the American College of Physicians and the American College of Radiology; aged 64; died, April 12, of hypertensive heart disease.

Harold Ney Prothero ⊕ Jeannette, Pa.; Jefferson Medical College of Philadelphia, 1903; past president of the Westmoreland County Medical Society; member of the school board; veteran of the Spanish-American War; on the visiting staff of the Westmoreland Hospital, Greensburg; aged 61; died, April 24, of coronary thrombosis.

Alexander Roderick McDonald ⊕ Chicago; Chicago Homeopathic Medical College, 1897; Rush Medical College, Chicago, 1898; at one time professor of physiology at the Hahnemann Medical College and Hospital; aged 77; on the staff of the West Suburban Hospital, Oak Park, Ill., where he died, May 3.

Byron Walter Malfroid ⊕ Flint, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1918; fellow of the American College of Surgeons; served during the World War; on the staffs of St. Joseph's Hospital, Women's Hospital and the Hurley Hospital; aged 46; died, April 6.

Maximilian Edward Smukler, Philadelphia; Jefferson Medical College of Philadelphia, 1910; member of the Medical Society of the State of Pennsylvania; ophthalmologist to the bureau of health of Philadelphia; on the staff of the Northern Liberties Hospital; aged 51; died, April 23.

Arnold William Hackfield ⊕ Seattle; University of Michigan Medical School, Ann Arbor, 1927; member of the American Psychiatric Association; served during the World War; on the staffs of the United States Marine Hospital and the King County Hospital; aged 40; died, April 26.

Otis L. Aultz, Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1891; member of the West Virginia State Medical Association; past president of the Kanawha

County Medical Society; at one time city health officer; aged 71; died, May 14, of arteriosclerosis.

Alva Nicholas Collins ✠ Detroit; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; past president of the Wayne County Medical Society; on the consulting staff of the Harper Hospital; aged 79; died, May 23, of coronary sclerosis and thrombosis.

Andrew Jackson Jones, Highland Home, Ala.; Kentucky School of Medicine, Louisville, 1885; member of the Medical Association of the State of Alabama; for many years postmaster; past president of the Crenshaw County Medical Society; aged 82; died, April 7.

Charles David Mason, Eutaw, Ala.; University of Alabama School of Medicine, 1914; member of the Medical Association of the State of Alabama; aged 53; died, May 17, in the Veterans Administration Facility, Tuscaloosa, of injuries received in an automobile accident.

John Johns, Martins Ferry, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1902; member of the Ohio State Medical Association; formerly member of the city board of education; health officer; aged 63; died, April 14.

Lincoln Atwood Sukeforth, Duluth, Minn.; Medical School of Maine, Portland, 1886; member of the Minnesota State Medical Association; aged 79; died, April 7, of arteriosclerosis, hypertensive heart disease and bronchopneumonia.

Walter Linwood Watson, Monroe, Maine; Medical School of Maine, Portland, 1894; Bellevue Hospital Medical College, New York, 1894; aged 72; died, March 20, of carcinoma of the stomach, right kidney and prostate.

Joseph F. Flynt, Paris, Mo.; Marion-Sims College of Medicine, St. Louis, 1892; Missouri Medical College, St. Louis, 1899; member of the Missouri State Medical Association; aged 71; died, May 3, of pneumonia.

Walter Joseph Smith, New York; Albany (N. Y.) Medical College, 1913; served during the World War; aged 58; died, April 25, in the Fairview Hospital, Great Barrington, Mass., of cerebral hemorrhage.

May Elizabeth Walker, Piedmont, Calif.; Cornell University Medical College, New York, 1914; on the staff of the Peralta Hospital, Oakland; aged 60; died, April 26, of carcinoma of the lung and breast.

John Jeurink, Denver; Barnes Medical College, St. Louis, 1899; member of the Colorado State Medical Society; aged 73; died, May 9, in St. Luke's Hospital of diabetes mellitus and arteriosclerosis.

Guy Llewellyn Burritt, Harrington, Maine; Baltimore University School of Medicine, 1901; member of the Maine Medical Association; aged 71; died, April 30, of cardiac thrombosis.

Herbert Ashley Church, East Canaan, Conn.; New York Homeopathic Medical College and Hospital, New York, 1889; died, April 6, of arteriosclerotic heart disease and bronchopneumonia.

Jesse Wilbur Calkins, Oakland, Calif.; Denver and Gross College of Medicine, 1907; member of the Pacific Coast Oto-Ophthalmological Society; aged 60; died, April 22, of coronary embolism.

Royal Lee Love, De Ridder, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1903; member of the Louisiana State Medical Society; aged 62; died, March 30.

Lucius Barnes Goodyear, Dixon, Ill.; Physio-Medical College of Indiana, Indianapolis, 1894; served during the World War; aged 76; died, May 1, of a self-inflicted bullet wound.

Wendal Doop Smith, Bridgton, Maine; University of Oklahoma School of Medicine, Oklahoma City, 1932; aged 36; died, April 6, of a self-inflicted bullet wound of the mouth.

Edgar Valentine Trull, Manchester, Vt.; Albany (N. Y.) Medical College, 1874; member of the Vermont State Medical Society; aged 85; died, April 23, of chronic myocarditis.

Joseph Charles Tripp, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 69; died, March 22, of carcinoma of the prostate and bladder.

C. W. Gillham, West Point, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1897; aged 67; died, May 2, at St. Mary's Hospital, Quincy, of pneumonia.

James Francis Hennesey, Stamford, Conn.; College of Physicians and Surgeons, Baltimore, 1904; aged 62; died, April 11, of arteriosclerosis and heart disease.

Beauregard F. Flint, Orange, Calif.; Eclectic Medical Institute, Cincinnati, 1886; aged 78; died, April 7, of hypostatic pneumonia and chronic myocarditis.

Nathaniel Love, Elmira, N. Y.; University of the City of New York Medical Department, 1889; aged 81; died, March 10, of acute dilatation of the heart.

Walter Cealey Kissinger, New Castle, Pa.; Jefferson Medical College of Philadelphia, 1903; aged 60; died, March 20, of a self-inflicted bullet wound.

William Charles Wright, Buffalo; Jefferson Medical College of Philadelphia, 1884; aged 78; died, March 23, of cerebral hemorrhage and hypertension.

Robert John Beacom, Killingly, Conn.; University of Edinburgh Faculty of Medicine, Scotland, 1886; aged 78; died, April 14, of chronic myocarditis.

William Edmund Cecil Day, Sioux Lookout, Ont., Canada; University of Toronto Faculty of Medicine, 1908; aged 56; died, March 30.

Mattie Laughlin Arthur, Omaha; State University of Iowa College of Medicine, Iowa City, 1886; aged 81; died, April 22, of coronary thrombosis.

Charles Addison Kefauver, Stoutsville, Ohio; Western Reserve University Medical Department, Cleveland, 1886; aged 83; died, April 2.

Gary Merle Henderson ✠ Upper Darby, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1921; aged 44; died, March 10.

Clark Middleswart Barstow ✠ Bryan, Ohio; University of Wooster Medical Department, Cleveland, 1881; aged 85; died, March 21.

William J. O'Brien, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1891; aged 76; died, March 4.

Clarence G. Folkins, Stanley, N. B., Canada; McGill University Faculty of Medicine, Montreal, Que., 1904; died, February 24.

Herman Castile ✠ Foreman, Ark.; University of Louisville (Ky.) Medical Department, 1911; aged 51; died, March 29, at Little Rock.

Elfrieda Schultz Bragg, Pittsburg, Kan.; Homeopathic Medical College of Missouri, St. Louis, 1900; aged 72; died, March 17.

Charles Frederick William Ross, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1909; aged 56; died, March 23.

Edward T. Belleau, Arthabaska, Que., Canada; Laval University Faculty of Medicine, Quebec, 1880; aged 84; died in March.

William C. Gilchrist, Orillia, Ont., Canada; Victoria University Medical Department, Coburg, 1888; aged 78; died, March 13.

James Bowers Bell, Greeneville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1894; aged 73; died, March 30.

Edmund C. Van Dusen, Athens, N. Y.; University of the City of New York Medical Department, 1885; aged 80; died, March 19.

Fred Elliott Hobbs, St. Louis; Marion-Sims College of Medicine, St. Louis, 1898; aged 66; died, May 12, of heart disease.

Frank X. Langelier, Montreal, Que., Canada; Baltimore University School of Medicine, 1893; aged 69; died, April 11.

James Gault McKee, Elk Lake, Ont., Canada; Trinity Medical College, Toronto, 1892; aged 73; died, March 1.

Charles Leslie Taylor, London, Ont., Canada; Trinity Medical College, Toronto, 1900; aged 61; died, April 6.

Edgar Duff Burnett, Anchorage, Ky.; Hospital College of Medicine, Louisville, 1904; aged 61; died, April 7.

John N. Wheeler, Chattanooga, Tenn.; Meharry Medical College, Nashville, 1902; aged 68; died, April 3.

Newton D. Guerry, Artesia, Miss.; Medical College of Alabama, Mobile, 1889; aged 74; died, April 14.

Samuel Richard Clemes, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1897; died, April 3.

Ralph Wimenitz, Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; aged 68; died, April 2.

Henry B. Stanley, Gainesville, Fla.; Southern Medical College, Atlanta, Ga., 1894; aged 73; died, April 8.

Isaiah E. Bee, Princeton, W. Va.; College of Physicians and Surgeons, Baltimore, 1890; died in March.

Euston Sisley, Calgary, Alta., Canada; University of Toronto Faculty of Medicine, 1888; died, March 20.

Bureau of Investigation

WORTHLESS (trademark) "CURES" DECLARED FRAUDULENT

Post Office Bars Yosmite Nabona's "Indian" Stuff from the Mails

A picturesque career in quackery has been closed—or at least halted—by the issuance of two Post Office fraud orders against a "healer" calling himself variously "Dr. Yosmite Nabona" and "Rev. Yomachee."

In April 1929 a Colorado Springs (Colo.) paper carried a full-page advertisement of Nabona's "Navajo Indian Remedies Co., Inc.," located in what was described as "The Navajo Indian village on the edge of the Black Forest" some 14 miles from Colorado Springs. In this advertisement Nabona, claiming to be known as "The Indian Doctor . . . all over the United States and in many foreign countries," declared that some $60,000 had been spent in recent months and as much more would be spent in that year in developing the village; that "as many as 700 patients have been treated in a single day," and that several Navajo Indian families were associated with him, compounding his various "remedies," this task being "an adjunct of the modern laboratory" that he claimed to have there.

Nabona further declared that since the previous summer (1928) "a veritable path was beaten to his door in the forest." But prior to that time, if one could believe his story, he was

> flat broke, having gone thru the Florida hurricane where his sanatorium was literally blown away and his real estate holdings in Miami and Miami Beach destroyed. However, he started over in the Pike's Peak region and after indifferent success for a time in Manitou hit upon the idea of locating in the Black Forest . . .

Nor did Nabona's colorful story stop there:

> A soldier of fortune for many years, Dr. Nabona has had a wide and varied experience having traveled to practically every corner of the globe in his quest of adventure. Born of full blooded Navajo Indian parents on a government reservation at Red House, Ariz., he was left "on his own" at the age of 9 when his parents died. For a few years he lived with a German couple in the Panhandle of Texas. He removed with them to their home in Germany and there came under the notice of a prominent Berlin surgeon. The Indian youth applied his knowledge of bone setting learned from his Indian parents to reset a broken leg of the son of the surgeon. For this act the surgeon guaranteed his education in the medical schools of Berlin and Madgeburg, [sic] Germany. He was graduated from the medical department of the University of Berlin.
>
> Just prior to the outbreak of the Spanish-American war Nabona came back to this country and when hostilities were declared joined the United States navy, seeing duty on the U. S. S. Baltimore under Admiral Dewey during the famous battle of Manila. Following the conclusion of the Spanish-American war his wandering saw him in service with the Boers in South Africa, as a member of the French Foreign legion in northern Africa, then a period in the Mexican navy which he joined at Guaymas. He later traveled in South America and finally in India.
>
> It was in Calcutta that Dr. Nabona learned the arts of the native Hindu medicine men and their practices he still follows to a great extent. The doctor has the features of the native Navajo Indian but speaks perfect English with a decided German accent, the result of his long life with the Germans and education in Teutonic educational institutions.

With this alleged learned background Nabona might have been expected to take his place in the scientific world rather than to run a mere "patent medicine" business and a quack "sanatorium." But apparently he had his own reasons for choosing the latter, and that he prospered in it is evident, if one may believe his boast that "hundreds of orders are received daily by mail and telegraph, from patients all over the United States and foreign countries for the Navajo Indian Remedies."

Nor did Nabona hesitate to disclaim any unworthy motive:

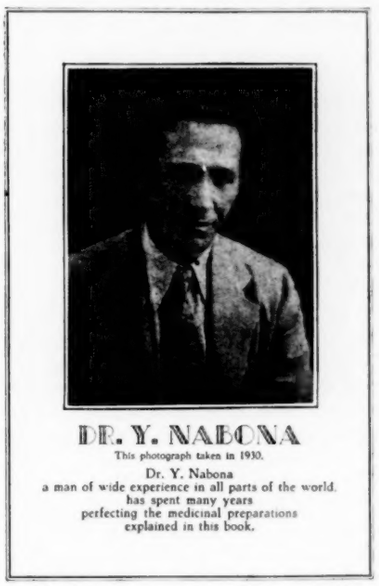
> *We are not here to defraud the people* [Italics ours—ED.] but to build up a thriving industry comparable to many others of similar nature throughout the country.

The Post Office Department, however, held a different opinion of this matter. Nabona further claimed:

> If I wanted to bunco the public as many think I am doing, I could have done it long ago. With a few mysterious rites and ceremonies, judicious use of paint and blankets, I could have cleaned up a million dollars in less than a year and left.

There were reports that Nabona sometimes "diagnosed" ailments by examining a drop of the "patient's" blood, which suggests that he was following the old Albert Abrams "electronic" fakery, as some observers charged and as will be brought out later. At any rate, he was said to have treated such serious diseases as cancer and tuberculosis. In a booklet that he put out under the title "A Treatise on Health and Happiness" he listed a long array of "cures," mostly designated as "Units," for various disorders but in another part of the booklet cautiously stated that "In order to comply with the regulations of the Food and Drug Administration . . . we shall not employ the following list of names of diseases in connection with our medicinal preparations." There followed a column of twenty-three ailments (plus "etc."), among them cancer and tuberculosis (as well as "consumption"). In other words, he seems to have "put over" at home what he later did not dare claim on his labels.

An exhaustive search through the records of the American Medical Association failed to reveal that Nabona had ever been graduated by or had even attended any medical school in this country or abroad or had been licensed to practice medicine in any state in the union on the basis of any diploma issued by either an American or a foreign medical college. They do show that when Nabona learned that the Colorado officials were about to investigate his activities he attempted to obtain a license to practice medicine in that state by producing an alleged diploma which he claimed to have received in 1896 from the University of Berlin. A photostat of this "diploma" was translated by an expert, who pronounced it to be spurious, and shortly afterward the University of Berlin reported that it had never issued a diploma to Nabona in the period from 1896 to 1910 or even enrolled him as a student, so far as it could find.


DR. Y. NABONA
This photograph taken in 1930.
Dr. Y. Nabona
a man of wide experience in all parts of the world.
has spent many years
perfecting the medicinal preparations
explained in this book.

Reproduced from one of Nabona's booklets.

Although the Colorado authorities in 1929 also turned down Nabona's application for a license to conduct his "sanatorium," it was said that he continued his activities around Colorado Springs for several years. In March 1932 Nabona advertised in a Pueblo, Colo., paper that he had located in Long Beach, Calif, and would treat his Colorado patients by mail, the Colorado courts having taken "everything" from him for alimony and attorneys' fees. The California authorities reported that Nabona had various diplomas exhibited on his walls at Long Beach. One was from the "College of Divine Metaphysics, Indianapolis" dated Jan. 15, 1932, conferring on him the degree of "Doctor of Metaphysics," and another from the same institution giving him the degree of "Doctor of Psychology." The report further stated that Nabona claimed that these diplomas cost him $150.

There was also a "duplicate" certificate from the Illinois College of Chiropody, certifying that Nabona had attended a course of lectures and a clinic from Aug. 23 to Sept. 3, 1920. Another document on exhibit appeared to be a diploma from the "Universitat von Berlin" (University of Berlin) dated December 1896, and supposedly conferring on Nabona the degree of "Doctor of Medicine and Massage." This was the diploma that had previously been declared spurious by the Colorado authorities when he attempted to obtain a license to practice in that state. Again, there was a "Certificate of Dissection, Department of Anatomy, National College of Chiropractic, Chicago." Finally there was a photograph of Albert

Abrams' class of 1923, showing Nabona as No. 23 in the class and giving his address as Sarasota, Fla. On his desk Nabona had a booklet calling him "Dr." The California authorities felt that his unwarranted use of this title was the only thing they could legally object to, particularly as Nabona apparently thought it expedient to comply with the state laws before starting business in Long Beach. They warned him, however, to discontinue using the title "Dr." and to remove it from all copies of his booklet.

In July 1933 a Denver paper was quoted as saying that Nabona had recently been arrested in Arizona and was to be deported on the ground that he was not an Indian but a German and had entered this country illegally. In June 1934 practically the same information came from Washington, D. C., but apparently the deportation proceedings were dropped. In July of that year Nabona sent out a letter over his signature, on the letterhead of the Navajo Industries Co., on which the Long Beach, Calif., address was crossed out and a postoffice box in Washington substituted. In this letter, addressed to a woman in Illinois, Nabona stated: "I am here on business and will be for some time." He went on to tell the woman that he "would not advise an operation" in her case "as the same will always come back" and suggested instead that she "send for two Units for your condition, the same is a two months treatment and the price is $4.00." Thus it appears that even while under the scrutiny, if not actually in the custody, of the government, Nabona was still promoting his quackery.

About this time the government also commenced action against Nabona through another agency. The Department of Agriculture seized in interstate commerce quantities of "Navajo Indian Herbal Teas" that had been shipped by Navajo Industries Co., Inc., and Paul Anacker, alias Dr. Yosmite Nabona, on or about March 28, 1933. It was charged that the labels bore false and fraudulent claims. Analyses by government chemists were said to reveal that the various products consisted chiefly of cut dried herbs, essentially as follows: For asthma, elder flowers and coltsfoot; for "hardening of the arteries," yarrow and horsetail; for neurasthenia, camomile, lavender and mint; for stomach catarrh, yarrow, elder, camomile and mint, and the one designated loosely for "stomach trouble" was essentially fenugreek and aloe.

On Nov. 21, 1934, a jury found the defendants guilty on all counts and the court imposed a fine of $200 against the Navajo Industries Co., Inc., and $200 against Yosmite Nabona (alias Paul Anacker) on one count of the information, arresting judgment on the remaining five counts. On December 5, Nabona was placed on probation for two years on condition that he pay the fine within that period.

Shortly afterward (Jan. 20, 1935) the United States Department of Agriculture issued a release to newspapers on this case, reading as follows:

> Paul Anacker, better known to swindled thousands as Dr. Yosmite Nabona, who "adopted" himself into the Navajos of Colorado, is in the toils of the law again. He was fined $200 in the Federal court at Los Angeles, Calif., recently. In default of fine, he was remanded to jail. Operating from Long Beach, Calif., where his outfit was called "Navajo Industries, Inc.," and formerly from Colorado Springs, Colo., where he was known as the "Navajo Indian Remedies Co., Inc." Anacker had shipped various herbs, powders, pills, and liquid medicines which were in violation of the Federal Food and Drugs Act.
>
> Investigation by Federal inspectors prior to the trial had indicated that "Dr. Nabona," who posed as an American Indian, was in reality a German by birth, and that he sent money at fairly regular intervals to a person, Frieda Anacker, in Germany. Although he listed in his advertising booklets a hundred diseases, including Bright's disease, pneumonia, syphilis, arthritis, epilepsy, paralysis and tumors, "Doctor" Nabona's sole claim to diagnostic and professional ability rested upon a "diploma" purporting to come from the University of Berlin, which, when translated, proved to be a midwife's certificate.
>
> Before his case came to trial, Anacker's trail had led across the country and back. He changed his place of business from his original location at Colorado Springs, Colo., to Los Angeles, but the earthquake of March 1933 interrupted his prosperity there. He went to Tucson, Ariz. He was later arrested at El Paso, Tex., on suspicion of illegal entry, but was released. In an attempt to vindicate himself, he visited the Indian Bureau and the Department of Labor in Washington, D. C., and then camped for several weeks at a tourist camp near Berwyn, Md., selling Indian wares and his own medicines. There he was again arrested and returned to California for trial.

But though it is reported that Nabona lay low for a while after this prosecution it was to be expected that he would bob up again with some fakish scheme. When he did, still another government agency, the Post Office Department, began to investigate him on finding that he had been operating since 1936 under two new names, Ajna Indian Herb Co. and Ajna Indian Preparations, at Hot Springs National Park, Ark. The trademark "Worthless," which they used on their mail-order nostrums, presumably represents unconscious humor and recalls the Minnesota woman who years ago put out something she called "Humbug Oil."

The Post Office memorandum which recommended that a fraud order be issued against Nabona's outfit brought out that though Nabona represented his products as being "herbal" mixtures and actual Indian remedies, some of them were, in fact, composed of milk sugar and small amounts of mineral substances, and all were purchased from pharmaceutical concerns in New York and Missouri. It was shown in one case that an individual claiming to have a femoral hernia sent Nabona an order for a treatment on the strength of a testimonial that Nabona had published on a similar case. The man made it clear that he did not want the treatment *unless* it would heal his hernia. Nabona accepted his money and sent the "treatment," but his letter as quoted in the memorandum more or less dodged the question of a *cure*. Government chemists reported that the tablets Nabona sent the man were essentially milk sugar and small traces of minerals including phosphorus, chloride, iron, sodium, potassium and arsenic. And this mixture, according to one published testimonial, was supposed to have cured a hernia! Further, the government brought out that the thing was essentially identical with some tablets that Nabona sent out, with a herbal mixture of tansy, strawberry and huckleberry leaves, as a remedy for diabetes! Almost identical tablets were sent out by Nabona for high blood pressure. There were also some other nostrums in the category.

The Post Office memorandum charged that the sale of Nabona's products through the mails constituted a fraud and recommended that they be debarred. Nabona neither appeared at the hearing to defend himself nor sent any one to represent him. On July 24, 1939, a fraud order was issued against "Dr." Yosmite Nabona, Ajna Indian Herb Co., Ajna Indian Preparations and their officers and agents as such.

But Nabona, apparently hoping to outsmart the Post Office, moved to Milwaukee, adopted the name "Rev. Yomachee" and again engaged in the activities that had brought on the order against his Arkansas business. He even admitted to one inquirer that the preparations he was sending out from Milwaukee were the same as those he had sold from Arkansas and solicited an order for his "rupture cure" tablets. Consequently on Sept. 29, 1939, a supplementary fraud order was issued to cover the name "Rev. Yomachee."

Thus far Nabona's record in quackery! Would it be surprising if he were to bob up again with the same old frauds but under still another trade style?

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE.—The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration.]

Dormalgin.—Lawson M. Luth, Darien, Conn. Composition: In each tablet approximately 2 grains of aminopyrine and three-fourth grain of a barbituric acid derivative. For rheumatism, gout, lumbago, sciatica, neuritis, painful menstruation and toothache. Fraudulent therapeutic claims.—[*N. J. F. D. 30782; January 1940.*]

E E Powders.—E E Medicine Co., Greensville, S. C. Composition: 4.99 grains of acetanilid per powder. Misbranded because labeled to contain only 4 grains of acetanilid per powder.—[*N. J. F. D. 30881; January 1940.*]

Hed Klear.—Van Patten Pharmaceutical Co., Chicago. Composition: Volatile oils including eucalyptus and menthol, with grain alcohol, isopropyl alcohol, acetone and water. Fraudulently represented as a relief for head colds, rhinitis, sinus irritation, hay fever and nasal catarrh.—[*N. J. F. D. 30879; January 1940.*]

Menestrex.—Rex Laboratory, Nashville, Tenn. Composition: Quinine sulfate (3.8 grains) and potassium permanganate (0.8 grain) per capsule. Fraudulently represented as a menstrual regulator.—[*N. J. F. D. 30777; January 1940.*]

Peranol.—Peranol Products, Chicago. Composition: Volatile oils including eucalyptus, camphor and menthol, with about 21 per cent of alcohol. For hay fever, nasal catarrh and rose fever. Fraudulent therapeutic claims.—[*N. J. F. D. 30884; January 1940.*]

Sodasal.—Sodasal Laboratories, Detroit. Composition: Aminopyrine (about 8 grains per fluid ounce), sodium salicylate (33.5 grains and 15 grains respectively, in two specimens), baking soda, sugar and water. Fraudulently represented as an effective alkaline treatment and a remedy for rheumatic pains, lumbago, uric acid and some other things.—[*N. J. F. D. 30895; January 1940.*]

Ung Nigrum.—U. N. Laboratories, Seattle. Composition (by percentages): Silver nitrate, 5.25, mercury, 3.35 and phenol, 1.68. Fraudulently represented as a remedy for burns, fresh or infected wounds, ulcers and infectious skin diseases.—[*N. J. F. D. 30790; January 1940.*]

U. N. Rectal Cones.—U. N. Laboratories, Seattle. Composition: Silver nitrate (0.015 Gm.), mercury (0.062 Gm.) and cocoa butter. Fraudulently represented as an effective treatment for internal hemorrhoids, fissures or rectal inflammation.—[*N. J. F. D. 30790; January 1940.*]

U. N. Vaginal Cones.—U. N. Laboratories, Seattle. Composition: Silver nitrate (0.1 Gm.), mercury (0.02 Gm.) and gelatin. For "pelvic inflammation, trichomonas and all vaginal infections." Fraudulent therapeutic claims.—[*N. J. F. D. 30790; January 1940.*]

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

RESUSCITATION OF SUBMERGED PERSONS

To the Editor:—**A boy aged about 17 had been in the water between an hour and a half and two hours before the body was brought to the surface. Artificial respiration was started as soon as he had been placed on the bank, with the use of an H-H inhalator with carbon dioxide-oxygen mixture but with no respiratory excursion. Even froth from the mouth was not obtained. There were no obstructions that could be determined. I injected 1 cc. of solution of epinephrine hydrochloride directly into the heart with no response. As there was no respiratory exchange and considering the fact that he had been in the water so long and had not responded to the epinephrine hydrochloride, I pronounced him dead with no hope of resuscitation, after about twenty minutes. In the crowd which always gathers at such an event, some of the spectators criticized the fact that we did not continue longer, stating that they had known of resuscitation after three hours' immersion. I want to obtain data as to the length of time a person can be submerged and yet be resuscitated. It has always been my impression that no one has ever been revived who has been in the water more than thirty minutes. In another method of artificial respiration of which I have heard that is considered to be better than the Schafer prone method there is manipulation of the shoulders. I would appreciate any information you have on these questions.**

Charles W. May, M.D., Pasco, Wash.

ANSWER.—Successful resuscitation of human beings has been reported to have been obtained after twelve, fifteen and twenty minutes and even from one-half to three hours from the time of initial submersion in water to the institution of resuscitative measures. The reliability of such reports, however, especially those recording the more prolonged periods, is subject to question. In the absence of actual timing by a watch or clock it is only natural, because of the confusion and anxiety incident to drowning, for observers to tend to overestimate the time.

The period after initial submersion during which resuscitation can successfully be applied will vary from case to case, depending on, among other things, the individual himself, the circumstances under which submersion occurred, whether he was able to take partial breaths of air, how much water was taken into the lungs and respiratory passages and, at least to some extent, the efficiency of the method of resuscitation employed. The power of an individual to remain under water without breathing varies considerably and is somewhat improved by practice. Ability to do so for a period of four minutes and forty-six and one-half seconds has been referred to (Resuscitation After Drowning, Queries and Minor Notes, THE JOURNAL, Aug. 29, 1908, p. 779). In general, attempts to resuscitate persons seemingly dead from drowning are more successful with those who become unconscious immediately on falling into the water and with those in whom apparent death occurs with little struggle. This is because the effect of submersion in water depends on whether the individual remains conscious and attempts to breathe or whether, owing to syncope, shock, apoplexy, spasm of the glottis or the like, breathing ceases immediately, in which case little or no water will be taken into the lungs. Power of recovery from apparent death from drowning then is in inverse proportion to the amount of water and mucous froth in the air passages and to the penetration of the substance of the lung with water, which amount and penetration, in general, are proportional to the efforts made at self preservation (Taylor's Principles and Practice of Medical Jurisprudence, ed. 9, edited by Sydney Smith, with revision of legal aspect by W. G. H. Cook, London, J. & A. Churchill, Ltd., 1934, vol. 1, p. 612). If the air passages are filled with water and froth and the lungs are waterlogged, resuscitation will be impossible no matter how soon the body is removed.

Observations on dogs by the Medico-Chirurgical Society of England (Report on Suspended Animation, *M.-Chir. Tr.*, 1862, p. 449. Taylor's Principles and Practice of Medical Jurisprudence, vol. 1, pp. 609, 611-612. Glaister's Medical Jurisprudence and Toxicology, ed. 6, edited by John Glaister, Baltimore, William Wood & Co., 1938, chapter 7, pp. 149-150) showed that complete submersion for a minute and a half was fatal provided respiratory effort was made while submersion was complete, but when respiration was entirely suspended under water simple deprivation of air could be maintained for four minutes without necessarily fatal results. Pol N. Coryllos (Mechanical Resuscitation in Advanced Forms of Asphyxia: A Clinical and Experimental Study in the Different Methods of Resuscitation, *Surg., Gynec. & Obst.* **66**:698 [April] 1938, p. 712), after similar observations, reported that the whole phenomenon of asphyxia by submersion "from its beginning to the death of the animal presented a remarkably constant duration of four to five minutes." He demonstrated four distinct phases of asphyxia by drowning, each of which lasted about one minute: (1) initial apnea, (2) dyspnea, (3) terminal apnea characterized by arrest of respiration, drop of blood pressure and disappearance of reflexes and muscular tonus, and (4) phase of arrest of the heart, characterized by rapidly progressing weakness of cardiac contraction and arrest of the heart. He found that resuscitation, while still easy when submersion was interrupted at the beginning of the third phase of asphyxia, became increasingly difficult as the end of that phase was approached. In the case of one dog, submersion was interrupted at the end of the third phase but asphyxia progressed to the fourth phase, the heart stopped, and resuscitation by artificial respiration and bronchoscopic intratracheal insufflation was unsuccessful. Another dog under the same conditions gave no response to artificial respiration but the animal was brought back to life by a mechanical resuscitator within twenty seconds after its application.

As a general rule in human beings asphyxia supervenes from one to two minutes after submersion or, at the most, three or four minutes, and death characterized by cessation of the heart usually occurs before the expiration of five or six minutes, but life may be considerably prolonged if from any cause water has been prevented from entering the lungs (Dolley, D. H.: On Resuscitation, *Univ. Missouri Bull., M. Ser.* **1**:5 [Oct.] 1913, on pp. 12-13. Smith, A. J., and Lucke, B. H., in Legal Medicine and Toxicology by Many Specialists, ed. 2, edited by Peterson, Haines and Webster, Philadelphia, W. B. Saunders Company, 1923, vol. 2, p. 380). Smith and Lucke state that the entire process may be completed in three or four minutes or may be prolonged to two or more times this period. They (Legal Medicine and Toxicology by Many Specialists, p. 386) also state that while instances of successful resuscitation have been recorded after submersion for twenty or thirty minutes there is usually little hope of success after submersion for more than four or five minutes; and where asphyxiation has been general and much water has entered the respiratory passages in the wild struggle for life, attempts to revive almost always fail. It is possible for ten or twelve minutes to elapse during "drowning," as partial breaths of air may be taken by the person before he goes down the traditional third time (Drowning and Resuscitation, Queries and Minor Notes, THE JOURNAL, Feb. 25, 1939, p. 764). It is probable that absolutely complete submergence for ten minutes, and perhaps less, may so far impair the respiratory center or bring the heart so completely to a standstill as to make the possibility of resuscitation unlikely, and when persons are resuscitated after

being in the water from fifteen to twenty minutes it is probable that submergence was incomplete and that some partial breaths of air were obtained (Drowning and Resuscitation, Queries and Minor Notes, THE JOURNAL, Oct. 18, 1924, p. 1263; Resuscitation, *ibid.*, Jan. 2, 1926, p. 58). In connection with persons overcome by mine gases it has been reported that deprivation of oxygen for about ten minutes may injure irremediably some of the most essential nerve cells of the brain (Cannon, W. B.; Crile, G. W.; Erlanger, Joseph; Henderson, Yandell, and Meltzer, S. T.: Report of the Committee on Resuscitation from Mine Gases, Technical Paper 77, Department of the Interior, Bureau of Mines, 1914, p. 7). Albert H. Miller (Resuscitation, *Rhode Island M. J.* **15**:39 [March] 1932, p. 42) states that resuscitation, to be efficient, must be begun within half an hour from the time when the heart beat ceases. He gives the following periods of resistance to entire deprivation of oxygen for various tissues of the body: cerebrum eight minutes, cerebellum thirteen minutes, medullary centers from twenty to thirty minutes, spinal cord from forty-five to sixty minutes, sympathetic ganglions one hour and mesenteric plexus three hours. Gordon Bates, R. E. Gaby and Wills Maclachlan (The Need for Prolonged Artificial Respiration in Drowning, Asphyxiation and Electric Shock, *Canad. M. A. J.* **39**:120 [Aug.] 1938) state that "it is possible for a person to have been under the water for up to half an hour and still live." Their opinion is based on, among other cases, three reported by Canadian physicians and one reported by the American Red Cross, in which resuscitation was successful after the body had been in water respectively for thirty minutes, from twenty to thirty minutes, fifteen minutes and from thirty-two to thiry-five minutes. But according to Taylor's Principles and Practice of Medical Jurisprudence (vol. 1, p. 612) "there can, however, be no question but that the earlier or more loosely recorded cases of recovery after submersion for more than seven to eight minutes involve a fallacy somewhere (possibly some air was drawn down in the clothes or hair of a woman or in the sail of an overturned boat, etc.)."

ATTACKS OF PARA-UMBILICAL PAIN

To the Editor:—**A white boy of 7, moderately well nourished, has been having attacks of colicky pain in the umbilical region every few months since the age of 4. These attacks last from a few minutes to a few hours and he has accompanying vomiting. No elevation of temperature is present. During the attacks the umbilical region is quite tender. He has had various diagnoses by varying physicians. Four months ago when I was first called he was in the midst of the longest attack he had had up to that time, the attack having lasted about twenty-four hours. The condition was as described. Exploratory laparotomy disclosed two intussusceptions present in the lower ileum about 3 feet from the ileac junction, the intussusceptions being about 2 feet apart. Reduction was simple. The appendix was normal but was removed. The rest of the small bowel was normal. There was moderate enlargement of the mesenteric lymphatic glands but this was attributed to toxic absorption from the intestinal obstruction. Recovery from the operation was uneventful. Since the operation there have been about two attacks a month lasting a few minutes and one lasting six hours. When calcium gluconate was administered intravenously and atropine sulfate subcutaneously at the onset of the attack on two occasions, the attacks ceased immediately but the aforenamed medication given late in the attack has had no effect. Enemas and abdominal massage have no effect. The child is of rather a nervous type. The attacks usually come in the early evening or night and are more prone to appear following a strenuous day of play or excitement. At present he is taking phenobarbital in small divided doses and tincture of belladonna. A high caloric diet has been prescribed. Any suggestions you may be able to give me with regard to treatment of the attacks or in prevention will be greatly appreciated, as I have been able to find nothing relative to recurrent intussusception of the small intestine in the literature I have available.** **Dean J. Darius, M.D., Pine Ridge, S. D.**

ANSWER.—Recurrent para-umbilical pain may be due to a number of intraperitoneal or retroperitoneal conditions. In young children, congenital anomalies of the small or large bowel frequently produce abdominal pain. A short mesentery may result in transient episodes of volvulus, but there is usually vomiting associated with the pain. A redundant sigmoid may kink or produce para-umbilical pain. Although an exploratory laparotomy failed to reveal any such anomaly in this patient, a complete gastrointestinal x-ray examination is indicated. Chronic recurrent intussusception may be due to tumors, peritoneal adhesions, Meckel's diverticulum, mesenteric cysts, or a ring of polyps in the ileum. The intussusception may be so mild that vomiting, a palpable tumor, and blood in the stools may all be absent. Diagnosis can be made only by careful examination of the bowel during an exploratory laparotomy. The extraperitoneal conditions most frequently causing abdominal pain include diseases of the lumbar vertebrae or of the genito-urinary tract or gallbladder. X-ray examination of the spine, urinalysis, and an intravenous pyelogram are indicated. If all these examinations are negative, the role of allergy must be considered as a possible explanation for para-umbilical pain.

OBESITY AND SCANTY MENSTRUATION AFTER MUMPS

To the Editor:—**What would you advise in the way of treatment for the following case? A married woman aged 28, 5 feet 8 inches (173 cm.) in height, weighing 152 pounds (69 Kg.) had severe mumps, bilateral, in December 1938, with some lower abdominal pain. Following recovery her menstrual periods have been regular, of twenty-eight day type but the flow is scanty where previously it was abundant and lasted for from seven to nine days. Now the flow lasts only from one to two days. Also following her recovery from mumps she began gaining weight and has continued to gain in spite of being on a strict diet of 1,500 calories. She has gained 30 pounds (13.6 Kg.) since December 1938. There has been a progressive increase in the amount of fat about the pelvis over the trochanters with some increase over the upper arms and about the spine of the scapula. The remainder of her body appears free of excess fat. Physical examination reveals a temperature of 97 F., pulse 80 systolic, blood pressure 102, thyroid of normal size, basal metabolic rate normal (— 2), urine and blood normal and blood sugar normal. General examination is otherwise negative except for the fat deposits described.**

M.D., Minnesota.

ANSWER.—This woman apparently had bilateral oophoritis complicating mumps, which is probably of more frequent occurrence than has been recognized. There is no reason why this complication should not occur just as frequently in women as orchitis does in men with mumps. The fact that she menstruates every twenty-eight days is not a criterion of normal function. The decrease in the duration of menstruation of from seven to nine days to one to two days is evidence of decreased ovarian response or ovarian hypofunction.

The gradual gain of 30 pounds has been described as of girdle location except for the trochanteric obesity. Trochanteric padding is characteristic for ovarian hypofunction, especially after 28 to 30 years of age. The patient evidently has a combination of two types of obesity, the girdle type (hypopituitary) and the trochanteric (hypogonad). That she gains weight on a strict 1,500 calory diet is evidence that it is not due to excess intake of food and decreased output. The patient is not much overweight at present, for the average weight for a woman aged 28 and 5 feet 8 inches in height is approximately 142 pounds (64 Kg.). However, there is a possibility that she will continue to increase in weight if measures other than diet are not utilized. Since the physical and laboratory examinations are negative, it is reasonable to suppose that her condition is endocrine in nature.

The causative basis for the ovarian hypofunction may be (1) insufficient gonadotropic hormone of the anterior pituitary to stimulate normal ovarian response, (2) sufficient gonadotropic hormone but inability of the ovary to respond to normal stimulation, and (3) hypofunction of both the anterior pituitary and the ovary.

It seems reasonable to believe from the history of mumps that the condition has more of a hypo-ovarian basis than pituitary; the trochanteric obesity also favors this deduction. However, if the patient really has some pituitary type obesity, then one must bear this in mind.

Without having seen or examined the patient, the best suggestion for treatment that one can give is the administration of 2,000 international units of estrone (theelin) in oil intramuscularly every other day for three weeks following cessation of menstruation. Then discontinue the medication to allow menstruation to occur. Repeat for three or four months. The patient should not be promised too much; if the ovaries are permanently damaged she will probably need substitutive therapy irregularly until after the climacteric.

If the posterior pituitary hypofunctions (the posterior pituitary is probably the gland involved in pituitary obesity) it may be necessary later to administer proper dosages of solution of posterior pituitary.

There is also the possibility of more generalized glandular hypofunction developing, especially involving the thyroid.

GRANULOMA INGUINALE

To the Editor:—**What might one expect from curettage of the lesions of granuloma inguinale? This procedure has no doubt been employed in the past and presumably without benefit or it would be in common use. My reason for asking is that I am trying curettage with medicated dressings and don't wish to subject patients to curettage alone as controls, if this can be avoided. Please give me any available information or references.**

M.D., Florida.

ANSWER.—Little benefit should be expected from curettage of the lesions of granuloma inguinale. It is more likely to be harmful than beneficial. Careful cleansing and sterile dressings are indicated. Antimony compounds are said to be specific (McGlinn, J. A.: *Am. J. Obst. & Gynec.* **12**:665 [Nov.] 1926). A 1 per cent boiled solution of sodium and potassium antimony tartrate is given intravenously. The first dose should be from 0.01 to 0.02 Gm. Thereafter from twelve to fifteen doses are given on alternate days in increasing doses up to

0.12 or 0.15 Gm. Diathermic fulguration has been used by F. G. Greenwood (*Brit. J. Radiol.* **4**:488 [Oct.] 1931). Hazen, Howard, Freeman and Scull (THE JOURNAL, Oct. 22, 1932, p. 1410) say "while irradiation is reasonably effective, the most certain results are obtained by a freshly prepared solution of antimony and potassium tartrate or injections of ampules of antimony thioglycollamide." Fuadin N. N. R. (a trivalent compound of antimony and sodium) is considered by Williamson, Anderson, Kimbrough and Dodson (THE JOURNAL, May 27, 1933, p. 1671) to be a "safe and rapid specific for granuloma inguinale."

BED ROCKING AND HEAD BANGING IN CHILDREN

To the Editor:—I have observed a boy since he was 6 months old, two and one-half years ago, who is mentally and physically well developed but who started at that time to get on his hands and knees and rock back and forth while in bed. Later he continued with such force that the bed made a great deal of noise. He also bumps his head on the headboard but doesn't seem to be injuring himself. This habit occurs until he is falling asleep. Of course this is annoying to the parents and I suggested to the mother first to change the bed. This didn't help because the child still insisted on rocking despite the change. I later suggested putting the child to sleep on his mattress on the floor in order to prevent excess movement. However, the child was put back into his bed because of the changed thermal condition of the room. He showed a definite improvement, rocking and bumping only occasionally. After the change of the temperature and weather conditions permit, I shall insist on putting the child back on the floor at least for six more months. The mother's second child was delivered by me six months ago, in every respect a normal boy. This child, now 6 months old, has started to get on his knees and hands and rock back and forth also. He seems to enjoy this process too. The mother is seeking my advice on how to prevent this annoying habit developed by her older child. My questions are: Did I advise the mother right regarding the breaking of this habit formed by the older child? What could you suggest to prevent the developing of this habit by the second child?

M.D., Illinois.

ANSWER.—There seems to be no good reason why any effort should be made to break the habit of bed rocking or head banging. Just why these habits develop is not known. It is probable that the infant gets some degree of pleasure from them.

There is no particular method that can be suggested for the prevention of the development fo this type of habit. It is probably more liable to develop in so-called nervous infants than in more phlegmatic children. Ignoring the habits completely usually causes their disappearance.

It probably is not advisable to have the child sleep on a mattress on the floor. The movement in the bed will do no harm. The bed may be fixed so that it will not shake. This will prevent noise and may serve somewhat in helping to overcome the habit.

AMENORRHEA

To the Editor:—A well developed girl of 20 years, weighing 120 pounds (54 Kg.), began to menstruate at 14. The periods were regular for a time, then missed a month or more at a time, and finally stopped three years ago without any symptoms. Treatment has been administered since June at weekly intervals, consisting of twelve injections of urginin with tablets by mouth, five injections of 1 cc. each of antuitrin, about thirty-six capsules of theelin and about forty thyroid tablets. There has been no response thus far. The breasts are well developed. There is an ordinary amount of pubic hair. The vaginal tract seems fairly well developed. The vagina is somewhat small, the uterus not infantile.

J. W. Mambert, M. D., Hudson, N. Y.

ANSWER. — There is rarely any need to treat secondary amenorrhea unless a woman has tried and has failed to have children. In such a case it is generally assumed that the amenorrhea is an indication of the absence of ovulation. However, it does happen occasionally that some women who do not menstruate and have an intact uterus do ovulate in spite of the absence of uterine bleeding. The way to determine the presence or absence of ovulation in cases of amenorrhea is to perform an endometrial biopsy once every two weeks. If microscopic study of the tissue obtained reveals a secretory endometrium, this is evidence of ovulation. A woman may ovulate at certain times and not at others. If three or four successive endometrial biopsies fail to reveal a secretory endometrium, ovulation is absent. In such cases one may try to stimulate ovulation by means of equine gonadotropic therapy.

This patient should have one or more basal metabolism studies made. If the rate is low, thyroid therapy should be instituted. Thyroid extract alone in proper doses may bring about a return of the menses. If the basal metabolic rate is normal and the patient's general health is good, she should be told that there is no need to restore her monthly periods at the present time. If, however, she insists, the simplest type of therapy is to give 50,000 international units of estrogen hypodermically twice a week for three weeks. Generally after this medication bleeding sets in. Nearly always, to produce further bleeding, more hypodermic doses of estrogen must be given.

RECURRENCE IN PITYRIASIS ROSEA

To the Editor:—A patient with pityriasis rosea states that the same condition was diagnosed eight years ago. How often does pityriasis rosea occur more than once in the same individual, and could you give me a few references to the literature on this subject?

J. T. Marr, M.D., Sterling, Kan.

ANSWER.—The clinical picture in pityriasis rosea is typical and is vividly described in the standard textbooks on dermatology. Until recently the feeling among dermatologists was that recurrence of the disease is rare, but occasionally dermatologists have seen bona fide cases of this condition a second time in individuals whom they have previously treated for pityriasis rosea. For references see Rulison, R. H.: Pityriasis Rosea: A Few Simple Facts, *Arch. Dermat. & Syph.* **7**:163 (Feb.) 1923. Ormsby, O. S.: A Practical Treatise on Diseases of the Skin, ed. 4, Philadelphia, Lea & Febiger, 1934, page 285, quotes von Szabóky: Beiträge zur Aetiologie der Pityriasis rosae, *Monatsh. f. prakt. Dermat.* **42**:495, 1906, as stating, among other things, that in 50 per cent of 119 cases of this disease there was a return of symptoms in only one. A recent article on pityriasis rosea is that by Niles, H. D., and Klumpp, Margaret M.: Pityriasis Rosea: Review of the Literature and Report of 219 Cases, in Thirty-Eight of Which Convalescent Serum Was Used, *Arch. Dermat. & Syph.* **41**:265 (Feb.) 1940.

POISON IVY

To the Editor:—Many years ago I was affected with poison ivy on both hands which spread rapidly up my arms in the usual way. After little relief from the usual methods of treatment, I covered both arms to the elbows with collodion. Relief was instantaneous and in due time the inflammation stopped. I have advised this treatment often to others, always with complete success, consisting of quick relief, stoppage of spreading and rapid cure. Most other methods advised require that the patient stop work if the method is to be effective.

Samuel B. Woodward, M.D., Worcester, Mass.

HEREDITARY FACTOR IN FACIAL PALSY

To the Editor:—In Queries and Minor Notes Dec. 16, 1939, page 2260, there was an inquiry from a New York physician who reported attacks of peripheral facial paralysis in a patient, the patient's father and his older brother. The question was whether there is a form of familial peripheral facial paralysis. The answer was "No hereditary factor in facial paralysis. . . . The disorder is so common that it might easily happen to affect several members of a family." Two facts do speak in favor of the assumption that there might be a constitutional hereditary component in the usual peripheral facial palsy: It occurs in members of the same family and it recurs in the same patient. Charcot first reported cases of facial palsy occurring in families. Neumann reported facial palsy in three sisters together with the child and grandchild of one of them. In addition he collected forty-one similar observations, Despaigne reported twenty cases and reports of further cases were published by Rauzier, Rossie, Sarbó, Auerbach, Weber, Simmonds, Oppenheim, Frey, Moebius, Bernhardt, Hoffmann, Hatschek, Huebschmann, Donath, Lannois, Mendel and Arkwright. Some of these authors stressed that in the hereditary cases the palsy resulted from trivial causes. The apparent presence of some constitutional factor in facial palsy is further evidenced by its recurrence in the same patient. Mouriquand and his co-workers reported the case of a girl who had eight attacks of facial palsy in two years. Remark found recurrence in 3 per cent of the cases, Bernhardt in 7.2, Sossinka in 3, Fuchs in 5.7, Peters in 6, Waterman in 2.7, Merwarth in 7.7 and Petit in 6. Of special interest in the problem of a hereditary factor in facial palsy are those cases in which palsy occurred and recurred in members of the same family. Such cases were reported by Rosenthal and by Johnson and Stoesser. In contradistinction to Erb, most of the authors (Charcot, Oppenheim, Eulenburg, Neumann, Alexander, Wexberg, Mendel, Huebschmann, Hoffmann, Urbantschitsch and others) assumed that some hereditary constitutional predisposition may be responsible for the occurrence of facial palsy. Nothing definite is known about the nature of this predisposition. Sarbó, Wassermann, Marfan and Delille, Despaigne, Phylip, Jendrassik, Higier, Ketly and Moskowitz assumed that an inherited anomaly or a narrowing of the fallopian canal were responsible. Others spoke of a hereditary vulnerability of the nerves that makes them susceptible to otherwise harmless noxae. Julius Bauer stated that there are "neuropathic-arthritic constitutional anomalies" in families with facial palsy. Kinnier Wilson pertinently summarized the problem in saying "To be compelled to resort to some form of 'predisposition' (anatomical or otherwise) is unsatisfactory but perhaps inevitable."

In this connection it is of interest to note that in other forms of mononeuritis, e. g., of the radial nerve (Mendel), of ramus superficialis of the radial nerve (Wartenberg), of nervus cutaneous femoris lateralis (Goldstein, Buchowsky) and even in crutch palsy (Wexberg) a constitutional inherited component has been assumed. It was Oppenheim who maintained that some individuals have an inherited tendency to acquire neuritis. Foerster agreed with Oppenheim in assuming that even for the occurrence of a neuritis after local trauma there must be some endogenous disposition.

Robert Wartenberg, M.D., San Francisco.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

Examinations of state and territorial boards were published in THE JOURNAL, June 22, page 2495.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II, Sept. 11-13. Part III, June or July, to be given in medical centers having five or more candidates desiring to take the examination. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: December 1940. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* October 21. Applications must be on file not later than September 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Chicago, Oct. 18-19. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville, Ky.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Cleveland, Oct. 5. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and written.* New Orleans, January 1941. Final date for filing application is November 15. Sec., Dr. Fremont A. Chandler, 6 N. Michigan Ave., Chicago.

AMERICAN BOARD OF PEDIATRICS: Memphis, Tenn., Nov. 17, preceding the annual meeting of the American Academy of Pediatrics. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF SURGERY: *Written.* Part I. Various centers, October 21. *Final date for filing application is September 15.* Sec., Dr. J. Stewart Rodman, 225 S. Fifteenth St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Oral and Written.* Chicago, February 1941. Applications must be on file not later than Oct. 15. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Connecticut March Report

Dr. T. P. Murdock, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, March 12-13, 1940. The examination covered nine subjects and included seventy questions. An average of 75 per cent was required to pass. Thirty candidates were examined, seventeen of whom passed and thirteen failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Harvard Medical School	(1929) 75,*	(1938)	81.7
Tufts College Medical School		(1937)	76.8
Washington University School of Medicine		(1938)	79.5
University of Pennsylvania School of Medicine		(1938)	75.1
University of Vermont College of Medicine	(1938) 75.2,	(1939)	76.9
Queen's University Faculty of Medicine		(1939)	76.5
University of Toronto Faculty of Medicine		(1932)	78.5
Medizinische Fakultät der Universität Wien		(1927)	75, 75.4*
Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Pecs		(1937)	75.9
Regia Università degli Studi di Bologna. Facoltà di Medicina e Chirurgia	(1937) 75.3,	(1938)	75
Regia Università di Napoli Facoltà di Medicina e Chirurgia	(1936) 75,	(1937)	75
Université de Genève Faculté de Médecine		(1938)	75

School	FAILED	Year Grad.	Number Failed
George Washington University School of Medicine		(1938)	1
Tufts College Medical School		(1937)	1
Medizinische Fakultät der Universität Wien		(1936)	1
Eberhard-Karls-Universität Medizinische Fakultät, Tübingen		(1922)	1
Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin		(1926), (1936)	2
Ludwig-Maximilians-Universität Medizinische Fakultät, München		(1923)	1
Thüringische Landesuniversitat Medizinische Fakultät, Jena		(1919)	1
Universität Heidelberg Medizinische Fakultät		(1920)	1
Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest		(1937)	1
Regia Università degli Studi di Bologna. Facoltà di Medicina e Chirurgia		(1937)	1
Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia		(1937)	1
Universität Bern Medizinische Fakultät		(1936)	1

Nineteen physicians were successful in the oral examination held for endorsement applicants at Hartford, March 26. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Yale University School of Medicine		(1937)	N. B. M. Ex.,* (1937) N. B. M. Ex.
State University of Iowa College of Medicine		(1936)	Iowa
Tulane University of Louisiana School of Medicine		(1932)	Louisiana
Medical School of Maine		(1914)*	Maine
Boston University School of Medicine	(1931),	(1938)*	N.B.M.Ex.
Tufts College Medical School	(1936),*	(1938)	N. B. M. Ex.
University of Minnesota Medical School		(1935)	Minnesota
Albany Medical College		(1932)	N. B. M. Ex.
Cornell University Medical College		(1937)	N. B. M. Ex.
Long Island College of Medicine		(1936, 2)*	New York
University and Bellevue Hospital Medical College		(1932)*	New York
Syracuse University College of Medicine		(1935)	New York
Temple University School of Medicine		(1934)	Penna.
University of Tennessee College of Medicine		(1931)*	Tennessee
Queen's University Faculty of Medicine		(1931)	New York

* License has not been issued.

Connecticut March Homeopathic Examination

Dr. Joseph H. Evans, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination held at Derby, March 12-13, 1940. The examination covered seven subjects and included seventy questions. An average of 75 per cent was required to pass. One candidate was examined and passed. The following school was represented:

School	PASSED	Year Grad.	Number Passed
Hahnemann Med. College and Hospital of Philadelphia		(1939)	1

Book Notices

Obstetrics and Gynecology. By the Departmental Staff of the University of Chicago and Other Contributors. Edited by Fred L. Adair, M.A., M.D., F.A.C.S., Mary Campau Ryerson Professor and Chairman of the Department of Obstetrics and Gynecology, in the University of Chicago, Chicago. Volumes I and II. Cloth. Price, $20 per set. Pp. 1,000, with 373 illustrations; 1,031, with 314 illustrations. Philadelphia: Lea & Febiger, 1940.

The two volumes prepared by Dr. Adair and the other members of the department of obstetrics and gynecology at the University of Chicago are the culmination of an enormous task. The editor states that this book "is not intended to be a work of reference but it is primarily designed for the medical student and the practitioner of obstetrics and gynecology." The inclusion of a large amount of historical data, numerous charts and tables and a huge amount of statistical information indicates that this book does serve as a reference book as well as a textbook. In chapter x, which contains thirty-three pages, there are twenty-four statistical tables and ten statistical charts. In addition to brief historical introductions in many chapters there is a history of maternal care which occupies twenty-three pages and a history and development of gynecology which takes up nine pages.

The allotment of space to the various subjects is uneven. Little space is devoted to common obstetric and gynecologic operations with which medical students and certainly practitioners should be familiar, but seven chapters with a total of 140 pages are devoted to the newborn in addition to the twenty pages given over to the chapter of intra-uterine growth. In spite of the editor's attempt to avoid repetition and lack of coordination, a number of obstetric and gynecologic subjects are discussed at length in more than one part of the same volume or in both volumes. Thus the subject of menstruation is taken up on pages 240-244 and on pages 491-494 in the same volume. The same neoplastic diseases are discussed extensively in the two volumes. The subject of postpartum hemorrhage is taken up separately from the disorders of the third stage of labor.

Likewise the distribution of the illustrations is unbalanced and occasionally confusing. A large number of illustrations are devoted to unimportant material and, on the other hand, none could be found for certain important subjects in obstetrics and gynecology. Thus, in addition to the large number of figures devoted to statistical charts throughout both volumes there are twenty-five illustrations for the subject of roentgenology in obstetrics and gynecology, seven for tuberculosis of the genitalia (but only one for gonorrhea of the genitalia), nine for the LeFort operation, seventeen showing only the external genitalia, sixteen depicting the breasts, an enormous number of monsters and 107 illustrations in the chapter on the relationship of pediatrics to obstetrics (140 pages). On the other hand, there are no illustrations showing internal version (there are four for external version), no illustrations showing packing of the uterus for postpartum hemorrhage, none on how to make an abdominal diagnosis in labor by means of the four "grips," none on how to take the external pelvic measurements or how to estimate and measure the pelvic outlet, none on how vaginal pessaries are to be used or even what such pessaries look like, none on the Rubin insufflation test and none on how to perform

a simple curettage, an abdominal hysterectomy or a vaginal hysterectomy. A few illustrations are duplicated in the two volumes (figures 329 and 330 in volume I are the same as figures 71 and 72 in volume II). Two of the three illustrations on hydatid mole are in the chapter on abortion in volume I and the third illustration is in the chapter on neoplastic diseases of the female genitalia in volume II.

There is an occasional error. In volume II (p. 868) is a list of mortality rates for the hysterectomies performed at the Chicago Lying-in Hospital. These are listed as follows: 167 complete abdominal hysterectomies with a death rate of 0.12 per cent, 416 incomplete abdominal hysterectomies, 0.002 per cent, and 180 vaginal hysterectomies, 0.11 per cent. The word "position" is used interchangeably with the word "presentation." The authors speak of "face position."

There is an extensive appendix which contains valuable information concerning dietetics, laboratory methods, vital statistics and comparison of weights, measures and temperatures. Likewise there is a long list of references occupying twenty-five pages. The index, which occupies thirty-six pages, is reprinted in both volumes, undoubtedly for convenience. The volumes are large.

An enormous amount of time and effort have been put into this elaborate work. It is well written in a style easy to read. The subjects of obstetrics and gynecology are fully covered, although not evenly distributed or illustrated. As shown in the list of contributors an appreciable proportion of both volumes was presumably written by young men and women who were instructors, residents and even interns at the Chicago Lying-in Hospital. Therefore many of the ideas expressed and much of the advice given by these contributors in the chapters they wrote are recommendations made by obstetric and gynecologic authorities consulted by these young obstetricians and not the fruits of their own experience, which of necessity must have been limited. The illustrations are most instructive. The drawings are well done and excellently reproduced and the typography is clear. Dr. Adair and his associates are to be complimented on their accomplishment.

Nutrition and Physical Degeneration: A Comparison of Primitive and Modern Diets and Their Effects. By Weston A. Price, M.S., D.D.S., F.A.C.D. Foreword by Earnest Albert Hooton, Professor of Anthropology, Harvard University, Boston. Cloth. Price, $5. Pp. 431, with 134 illustrations. New York & London: Paul B. Hoeber, Inc., 1939.

The author's major interest is oral degeneration and oral disease. His approach to the problem is evangelistic rather than scientific. He is first appalled by "the progressive decline of modern civilization" because of the "physical, mental and moral deterioration of the modernized peoples." In the second place he is amazed and inspired by the revelation of the fund of wisdom, especially nutritional, in the culture and customs of primitive people and by their physical fitness. And in the third place he proposes as the remedy for this progressive decline that "We too, like the successful primitive stocks, can make, as a first requisite, provision for adequate nutrition for generation and growth," and second, for the regulation of overloads such as pregnancy. His dietary program for the control of dental caries differs but little from that recommended by other more conventional nutritionists, namely one rich in vitamins, in minerals, in fresh fruits and in fresh vegetables and one low in highly refined cereals and cereal products. It is composed of "a menu that is low in starches and sugars, together with the use of bread and cereal grains freshly ground to retain the full content of the embryo or germ, with milk for growing children and for many adults, and the liberal use of sea foods and organs of animals." To this he recommends the addition of a mixture of equal amounts of a very high vitamin butter and a very high vitamin cod liver oil. There is little reason to accept the verdict of the writer of the foreword that this is an "epochal piece of research." Above all it is the story of an observant, but not wholly unbiased, traveler who relates entertainingly what he discovered during vacation trips to primitive peoples in Switzerland, the Hebrides, North America, Melanesia, Polynesia, Africa and South America. Purposely detailed scientific data are not included although there is considerable information concerning native trade and customs. Both lay and professional readers will no doubt enjoy it whether or not they agree with any or all of the author's conclusions.

Anesthesia: Narcosis, Local, Regional, Spinal. By A. M. Dogliotti, M.D., Professor of Surgery, University of Modena, Modena, Italy. Authorized English translation by Carlo S. Scuderi, M.S., M.D., F.A.C.S., Associate in Surgery, University of Illinois College of Medicine, Chicago, Illinois. Cloth. Price, $7.50. Pp. 680, with 236 illustrations. Chicago: S. B. Debour, Publishers, 1939.

This is the first Italian treatise on anesthesia. The author seems to have devoted a great deal of his attention to the study of anesthesia and has written a good book. It is essentially a glorified outline. It describes not only points in anesthesia but also technical steps in surgery, so that the book should appeal to both surgeon and anesthetist, but more particularly to the surgeon who supervises anesthesia for his own patients. Dogliotti has limited himself largely to a practical discussion. The book is freely illustrated and is one that will be of value to all specialists in anesthesia and should be an excellent reference book for any library that wishes to obtain a book which covers all phases of anesthesia.

Choice and Change of Doctors: A Study of the Consumer of Medical Services Conducted Under the Auspices of the Committee on Research in Medical Economics. By Gladys V. Swackhamer. Paper. Pp. 47. New York: The Committee, 1939.

From interviews of 365 households with "a high proportion of foreign born and first generation Americans" living in the slums and crowded tenement districts of the largest city in this hemisphere, it was discovered that the choices of medical service were extremely varied and not usually very wise. While one third, even of these families, tended to have a family doctor, they were frequently led to try other sources of medical care. The medical profession has known these facts for a long time and, as in so many other fields of medical activity for the defects in which the profession is criticized, has been about the only body that has tried to improve this condition. Several county medical societies have set up plans to give systematic guidance in the selection of physicians, and the profession has long been studying means of educating the public in methods of more intelligent choice. It is noteworthy that the study does not show any superiority of medical care under such systems of prepayment as existed and that, in a remarkably high percentage of the instances given, the exercise of a new choice seems to have improved the medical service received. No reference is made to the fact that it is the existence of a potential choice that is one of the most important means of protection against the worst types of medical service. No effort is made to show that selection by parties more interested in financial, political or other considerations than standards of medical service would improve the condition. The investigator might have learned much from a study of the history of the compensation clinics in New York City, where injured workers were denied freedom of choice and where, as a result, it required official investigation and legislative action to remove almost incredible abuses.

Medical Uses of Radium: Summary of Reports from Research Centres for 1938. Medical Research Council, Special Report Series, No. 236. Paper. Price, 30 cents; 1s. Pp. 49, with 5 illustrations. London: His Majesty's Stationery Office, 1939.

The Medical Research Council's seventeenth annual report summarizes the medical uses of radium and radon at various research centers in England for the year 1938. The report provides an opportunity for cursory review of the investigations in experimental and clinical fields together with a rapid appraisal of the progress and results of the research. The clinical sections outline the technical methods in use at the various centers for treatment of cancer and include a number of the tables containing pertinent statistical data. A special section on teleradium therapy reports the progress and investigations of the use of the radium beam. Of particular interest is the use of large radium sources (10 Gm.) and parallel investigations of 200 kilovolt x-ray and 5 Gm. radium units.

Heil Hunger! Health Under Hitler. By Dr. Martin Gumpert. Translated from the German by Maurice Samuel. Cloth. Price, $1.75. Pp. 128. New York & Toronto: Alliance Book Corporation; Longmans, Green & Company, 1940.

From material "all of it provided by Nazi authorities and Hitler officials, by the doctors, statisticians and scientists of the Third Reich," a terrible picture is painted of health conditions in Germany. Rickets is on the increase. A systematic examination of the school children of Munich "discovered that only 3.5 per cent were free from symptoms of rickets!" As the

result of undernourishment and excessive athleticism, German youths are already invalids. The annual suicide rate is 4.1 per 10,000 compared with 1.4 in the United States. Tuberculosis, after long years of decline, is once more on the increase, and the tuberculous are now compelled to undergo heavy work in order to speed up production and this is also being defended with pseudoscientific arguments. The records of the sickness insurance system show an increase in cases of sickness of 20.3 per cent between 1933 and 1936. In spite of the claims of the Nazi régime that women were to be returned to the home, twice as many women were employed for wages in 1938 as in 1929. The destruction of scientific training in the universities and the encouragement of quackery by the government is lowering the quality of medical care. The disabilities reported among those called up for military service are steadily increasing. Practically all these statements are documented from official sources available in this country.

Aids to Dermatology and Venereal Disease. By Robert M. B. Mackenna, M.A., M.D., B.Ch., Hon. Dermatologist, Royal Liverpool United Hospital (Royal Southern Hospital), Liverpool. Second edition. Cloth. Price, $1.25. Pp. 284, with 7 illustrations. Baltimore: William Wood & Company, 1939.

This edition, like the first, has been prepared with the hope that students and practitioners might find within its covers a convenient synopsis of the commoner cutaneous and venereal diseases. The book has been thoroughly revised with especial attention to revision of therapeutics, the chapters on tuberculids, dermatitis and prurigo. In the therapy of erysipelas the use of sulfanilamide, among other things, is discussed in a brief but adequate manner. While the work is small and does not contain the photographs seen in larger textbooks, the succinct descriptions of the conditions discussed and various agents used by the dermatologist are essentially good and complete enough to give one a basis for further reading in the larger textbooks or monographs if more information is desired. There are a number of illustrated sketches. The treatment of syphilis is excellent and succinctly discussed and includes a brief discussion of the toxic effects of treatment. On the whole, this work is to be highly recommended for one desiring a synopsis of dermatology for a background to be complemented by further study of the large standard textbooks when desired.

Modern Urology for Nurses. By Sheila Maureen Dwyer, R.N., Supervisor, J. Bentley Squier Urological Clinic, Presbyterian Hospital, New York, and George W. Fish, M.D., Associate Professor of Urology, College of Physicians and Surgeons, Columbia University, New York City. With a foreword by Helen Young, R.N., Director of Nurses and Nursing Service, Columbia-Presbyterian Medical Center in the City of New York. Cloth. Price, $3.25. Pp. 290, with 60 illustrations. Philadelphia: Lea & Febiger, 1940.

The title aptly describes the contents of this splendid book. Good nursing, preoperatively and postoperatively, is probably never more urgently required than in urologic cases. The collaboration of these authors, who are well experienced in the care of these patients, from the nurse's as well as the surgeon's point of view, answers a long felt need for a sound basic textbook to prepare a nurse for competent urologic nursing. They are to be congratulated on this accomplishment. An adequate understanding of the pathology and physiology of the urogenital tract is an essential for satisfactory urologic nursing. Possessing it, the nurse can cooperate more intelligently with the physician and realize the importance of certain procedures which otherwise might not have any significance to her. The photographs and drawings with the accompanying text enable the nurse to acquire this understanding and simultaneously the knowledge of the principles of the nursing responsibility for these patients. The sequence of the book is well arranged. The chapters on operative procedures and instruments and their care are excellent references for any surgical nurse. This book should be the means of providing more intelligent attention for patients suffering from urologic entities not only because of its fine presentation of the theory and practice of urologic nursing but also for its complete plan for a urologic service. Of course, it is understood that not all hospitals can equip such a unit as described, but at least a workable plan is submitted which can be altered to suit the needs of individual hospitals.

The book is recommended to hospital training schools, where the chapter on suggestions for a teaching program alone should be a valuable adjunct in preparing the curriculum. Nursing supervisors with urologic cases should not be without a copy; in fact, every graduate nurse will find it a profitable investment.

Handbuch der mikroskopischen Anatomie des Menschen. Herausgegeben von Wilhelm v. Möllendorff. Band VI: Blutgefäss- und Lymphgefässapparat innersekretorische Drüsen. Teil 2: Innersekretorische Drüsen I: Schilddrüse, Epithelkörperchen, Langerhanssche Inseln. Bearbeitet von Dr. W. Bargmann, Dozent an der Universität Leipzig. Paper. Price, 72 marks. Pp. 306, with 152 illustrations. Berlin: Julius Springer, 1939.

This second part of the sixth volume deals with the thyroid and parathyroid glands and with the islands of Langerhans. It has been prepared by Dr. Bargmann. Since the parathyroids are distinct from the thyroid, both genetically and functionally, Dr. Bargmann does not like to use the name parathyroid. He prefers to call these glands epithelkörperchen, the little epithelial bodies. This section constitutes a thorough review of researches in these fields in all countries up to the time of publication. It includes an exhaustive list of papers published and is indispensable for all research students in the field or for any student who wants to become thoroughly acquainted with the present status of our knowledge in any part of it. The illustrations are taken from these publications or from Dr. Bargmann's own preparations. Many are from colored drawings or photomicrographs. The book presents the general excellence characteristic of the publications of Julius Springer.

A Handbook of Elementary Psychobiology and Psychiatry. By Edward G. Billings, B.S., M.D., Assistant Professor of Psychiatry, University of Colorado School of Medicine, Denver. Cloth. Price, $2. Pp. 271, with 10 illustrations. New York: Macmillan Company, 1939.

The author is director of the psychiatric liaison department of the Colorado General Hospital. The present book, which is intended to serve as an "orientation manual of psychobiology and psychiatry," is a compendium for students and physicians. It contains the material the author has found the most effective in meeting the needs of students in the study and management of the "disorders of personality functioning as they occur in clinical medicine and psychiatry."

Part I is a brief introduction to psychobiology as developed by Dr. Adolph Meyer, utilizing and defining the terminology coined by Dr. Meyer. Psychobiology is discussed as "the physiology of the total man," as dealing with "the meanings of things in the life of a person." This discussion of personality development and functioning stresses the person as a unit, as an organ for the further integration of functions at the various levels of integration (physicochemical, anatomic, and so on) in the service of the total personality. This highest level of integration, the psychobiologic level, may be studied in terms of aggregates of personal functions (action tendencies, intellectual attributes, emotional-hormonal functions). Charts are included to indicate levels of integration and factors involved in personality development and reaction.

Part II discusses psychiatric examination procedures for adults, for children and for inaccessible patients. Detailed outlines of procedure are provided. The author stresses the importance of proper initial approaches to the patients and of the rapport. The guide for examination of noncooperative patients is that developed by Drs. K. E. Appel and E. A. Strecker.

General psychopathology is discussed in part III. Following a discussion of normal and abnormal personality functioning, the author outlines and describes constitutional psychopathic reactions, the neuroses and the psychoses. Though necessarily condensed, descriptively satisfying accounts of the various commonly encountered clinical entities are offered. A brief chapter on general principles of psychotherapy gives those principles which the author has found to be "conservative, safe, conducive to constant psychopathological research into the genesis and dynamics of the patients' illness and . . . applicable to the rank and file of psychopathological states." Indirect therapeutic procedures, such as palliative measures for relief of symptoms, general supportive and "sublimative" therapies (as occupational therapy), are outlined briefly. Direct therapy is discussed in terms first of management of "dynamic factors in the external milieu" and secondary in management of the personality-determined factors. For personality study, psychoanalysis as a

methodology is merely referred to and a bibliography provided, and the "distributive analysis," the methods of Adolph Meyer, are briefly discussed and outlined.

This handbook is a carefully considered work which, in the main, should be quite useful to medical students. The clinical aspects of the book will be more comprehensible to the medical student than the introductory material. The excellent clinical discussions lack clarity of formulation of dynamics. This reflects half-hearted acceptance of those principles of dynamic psychology the more complete expression of which would be found in the formulations of psychoanalytic psychology. The format of the book is such that it can be slipped into the student's pocket, but this size renders many of the illustrations and tables all but useless on account of the microscopic size of the type.

Précis de médecine des enfants. Par P. Nobécourt, professeur de clinique médicale des enfants à la Faculté de médecine de Paris. Sixth edition. Cloth. Price, 175 francs. Pp. 1303, with 604 illustrations. Paris: Masson & Cie, 1939.

As the title suggests, the work is a summary of clinical pediatrics. It consists of brief clinical descriptions, often illustrated, of almost every condition met by the pediatrician. Little space is given to therapy or to newer scientific developments. Little emphasis is laid on subjects such as the vitamins and deficiency diseases, and the references are infrequent and out of date. For instance, in the discussion of rickets the insignificant emphasis laid on vitamin D is in contrast to the hysterical overemphasis placed on it by our American commercial propaganda. The author gives half a page to deficiencies of amino acids and another half page to the minerals. The book is unlike American textbooks or even our clinical publications. The clinical descriptions are often so much briefer than ours that it is hard to consider them as being an aid to the student. On the other hand the lack of space given to the newer advances in etiology and therapy interferes with its interest to the pediatrician. The clinical descriptions are characteristically French in being clear and to the point. The book may have interest to those who wish a compact reference book to find in a few moments a ready description of almost any condition met in the field of pediatrics.

An Outline of Medical Psychology. By E. Fretson Skinner, M.A., M.D., F.R.C.P., Physician in charge of the Psychological Clinic, Sheffield Royal Hospital, London. Cloth. Price, 6s. Pp. 173. London: H. K. Lewis & Co., Ltd., 1939.

This British volume attempts in a small space to cover the significant background material in psychology and to present a brief picture of a few of the neuroses. It is divided into three parts, the first dealing with physiology but, unfortunately, including discussions of the development of the mind, the unconscious mind and instinct and emotion, which this reviewer scarcely can see could be tied up with physiology as the author presents it. The more recent developments in psychobiology and psychosomatic medicine do present a relationship of mind to the central nervous system but that is not the presentation which Skinner develops in his book. The second part treats of psychopathology and this part is a very brief summary of freudian psychoanalysis stressing dreams, the unconscious and sexuality. The third part is devoted to the clinical aspect of the subject, including a discussion of about ten pages on hysteria but on no other psychoneurosis, although a chapter is devoted to the brief presentation of about nine cases of assorted psychoneuroses. There is a brief discussion of therapy. Skinner claims that the book is intended for the medical student who wishes a brief introduction. Surely there are many books which have been published prior to this one which could be more adequate to such a purpose. The genesis of the psychoses, modern psychology, psychodynamics, psychobiology and diagnosis and treatment of the psychoses are all omitted. Relationship of the mental case to society is barely touched on and the discussions of therapy are so brief as to give rather an invalid impression than a valid one. This book cannot replace the more conventional manuals of psychiatry, and it is to be hoped that the medical student is not in such a condition as to require a simpler volume than the textbooks prepared in this country by Rosanoff, Noyes or others by the time he reaches the place in the medical curriculum where he needs instruction in medical psychology.

Sketches in Psychosomatic Medicine. By Smith Ely Jelliffe, M.D., Consulting Neurologist to Manhattan State and Kings Park Hospitals, New York. Nervous and Mental Disease Monographs, No. 65. Boards. Price, $3. Pp. 155, with illustrations. New York: Nervous and Mental Disease Monographs, 1939.

This collection of papers written by Dr. Jelliffe over a period of years is especially interesting at this time because of the intensified interest in psychosomatic problems. The author has long been the most prominent advocate of principles of psychosomatic medicine. In his textbook, written with the late Dr. White, he has always attempted to integrate psychologic factors with problems of organic medicine. In the collected papers within this volume the catholic interest of the author is indicated by the range of subjects about which he has written. From myopia to contractures of the hand one finds evidences of unconscious psychologic factors in the etiology. Dr. Jelliffe's work will long remain as a milestone in the development of psychosomatic medicine and his original investigations are of great interest. However, the actual correlations between emotional disturbances and physical dysfunctions are not worked out in the detail that we now have at our command. The field of psychoanalysis has progressed to such an extent in the last two decades that much of the psychologic material in this series of collected papers has been amplified and improved on to a great extent. The work then has a value as a historical brochure and as indicating certain basic principles.

The Genetics of Schizophrenia: A Study of Heredity and Reproduction in the Families of 1,087 Schizophrenics. By Franz J. Kallmann, M.D., New York State Psychiatric Institute and Hospital, New York. With the assistance of Senta Jonas Rypins, A.B., and with an introduction by Nolan D. C. Lewis, M.D., Director, New York State Psychiatric Institute and Hospital. Cloth. Price, $5. Pp. 291. New York City: J. J. Augustin Publisher, 1938.

This book presents the results of a study of 1,087 schizophrenic probands and their families. The material, obtained in a German population, by painstaking investigation of schizophrenic patients in the Herzberge Hospital of Berlin between 1893 and 1902, although unselected, was rigorously classified. All blood relations were exhaustively surveyed and discriminately diagnosed. Statistical, classificatory, demographic and social analysis yielded figures for fertility, mortality, disease expectancy and genetic data.

The author, in his foreword, states that the principal aim of the investigations was to offer conclusive proof of the inheritance of schizophrenia and to establish a dependable basis for the clinical and eugenic activities of psychiatry. Analysis of the data reveals hereditoconstitutional factors having a decisive influence in the origin of schizophrenia, as the following conclusions indicate:

1. Families affected by schizophrenia show a progressive and uninterrupted social decline.

2. Germinally affected and overt schizophrenic individuals show a lowered marriage and birth rate, although not sufficient to lead to self elimination. Catatonic hebephrenic patients fall below the general population by one half in this regard.

3. The probable recurrence of schizophrenia is nineteen times greater in children of the schizophrenic than it is in the general population.

4. Predisposition to schizophrenia is specific, but phenotypic manifestations vary, depending on the interplay of somatic and constitutional factors.

5. Frequency-expectancy of schizophrenia in children does not depend on the sex of the schizophrenic parent or on whether they were born before or after disease onset.

6. Psychopathologic abnormalities, epilepsy, feeblemindedness, neurosyphilis, alcoholism and criminality bear no biologic or hereditary relationship to the hereditary circle of schizophrenia. Each follows its own pattern of heredity and has independent selective factors. The blood kin of schizophrenic probands show no increase in expectancy of any of the abnormalities except as far as increased alcoholism and criminality is conditioned by the more frequent manifestation of the schizophrenic psychosis.

7. There is a consistent association of frequency of schizophrenia with mortality from tuberculosis, which may have com-

mon origin in a hereditary functional deficiency of the reticuloendothelial system. The correlation and concordance are such that expectancy of schizophrenia and mortality from tuberculosis are the same in all blood relations of schizophrenic probands and lead to the assumption that the two tendencies are gene coupled and take the same recessive hereditary course.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Disability Resulting from Repeated Bruising Not an Occupational Disease.—In the course of her employment, the plaintiff operated for about two weeks a machine for sewing cuffs on shirts. To operate the machine it was necessary that she exert lateral pressure with her right knee against the flat side of an elliptical plate, which was attached by a set screw to a rod extending to the so-called table of the machine. She was called on to exert this lateral pressure with her right knee about 288 times an hour. The mechanism on the machine used by the plaintiff was defective. At times the set screw would become loose and the plate would slide around the rod so that its edge, or the screw itself, instead of the flat surface of the plate, would be pressed by the operator's knee. The plaintiff's knee gradually became sore. On one occasion, according to the testimony of the plaintiff, the "screw part" hit her knee and bruised it badly. It became acutely inflamed and she was forced to cease working. For the resulting disability she sought compensation under the workmen's compensation act of Maryland and the matter eventually reached the Court of Appeals of Maryland.

The employer contended that the plaintiff's disability resulted from an occupational disease and not from an accidental injury and was not, therefore, compensable under the Maryland act. In the opinion of the Court of Appeals, the disability in question did not result from an occupational disease since the very nature of the injury did not satisfy the "literary definition" of a disease, which ordinarily implies some morbid derangement of bodily functions. The injury suffered here, said the court, was more consistent with the injury and destruction of tissue by the application of external force, such as a blow. The term "accidental injury" is generally accepted as meaning physical injury to the bodily tissues caused by some unusual condition or occurrence in the employment and is associated in varying degrees with the elements of force, violence and surprise. While the word "accident" connotes suddenness, it does not necessarily imply that the occurrence is instantaneous. An injury may be accidental even though the conditions which caused it extended over a considerable period of time.

In the instant case, continued the court, there was evidence legally sufficient to support the conclusion of the trial court, which overruled the holding of the accident commission, that the plaintiff's knee was bruised and injured by the operation of the knee press, which because of faulty adjustment was stiff and hard to move; that while she knew of the faulty adjustment she did not know and did not expect that operating the knee press would injure her knee, and, finally, that the injury which caused the acute inflammation which prevented her from continuing to operate the knee press was caused by the press plate slipping around the rod to which it was fastened so that when she pressed her knee against it she struck the set screw instead of the smooth surface of the plate. These facts, in the opinion of the court, were sufficient to require the submission to the jury of the issue of whether the plaintiff's disability resulted from an accidental injury arising out of and in the course of her employment.

Accordingly, the Court of Appeals affirmed the judgment of the trial court and ordered, in effect, that compensation be awarded the plaintiff.—*Foble v. Knefely (Md.), 6 A. (2d) 48.*

Charitable Hospitals: Liability for Burns to Child of Pay Patient.—A pay patient, Mrs. Miller, was delivered of a male child at St. Joseph's Hospital in Tacoma, Wash., one of eight hospitals owned and operated by the defendant corporation, the Sisters of St. Frances. On the ninth evening after the child's birth he was entrusted to the sole charge of a student nurse employed by the hospital. She placed him on his back about one foot from the edge of an adult's bed located about one inch from a heated radiator. She then left the room for a few minutes at the request of her supervisor, and on her return she found the baby lying on his back with his head resting against the radiator. The child sustained severe burns on his head which left permanent scars and a defect in the top of his skull. Subsequently the mother and father of the child brought suit against the defendants, the corporation and the student nurse, to recover damages for the injuries which the child had sustained. From a judgment in favor of the plaintiff the defendants appealed to the Supreme Court of Washington.

The Supreme Court agreed with the defendants' contention that the Sisters of St. Frances is a charitable organization and is not liable for the alleged negligent acts of its servant. In this state, said the court, a charitable hospital conducted not for profit is not liable under the rule of respondeat superior for the negligence of its employees unless it was negligent in failing to exercise ordinary care in their selection and retention. Also, the fact that patrons of a hospital pay for services rendered does not deprive the institution of its status as a charitable organization, provided that its income is devoted to the establishment of its charitable purposes and no portion thereof is diverted to private profit or advantage. In the judgment of the court, the articles of incorporation and by-laws of the defendant corporation showed that it was organized as a charitable corporation, and there was no evidence that any of the corporation's officers or agents diverted to the private advantage or profit of any person any of the income derived from the operation of the hospital.

Although the trial court correctly instructed the jury that the defendant corporation was a charitable institution, it erred, said the Supreme Court, when it admitted over the defendants' objection evidence introduced by the plaintiff showing the amount of property owned by the corporation, the amount of cash St. Joseph's Hospital had on hand and the name of the bank in which it was deposited, and the excess of the hospital's income over disbursements and the use of such excess to reduce a mortgage on the hospital property. The mere fact that the income of a corporation exceeds its operating expenses does not make it any less a charitable organization if the excess of income over expenditures is used for carrying on the charitable purposes for which it was organized. The payment of a legitimate corporate indebtedness, such as a mortgage, is certainly in furtherance of the charitable purposes of a corporation. In the opinion of the court, the admission of the evidence objected to by the defendants was improper because such evidence had no bearing whatever on any issue in the case. It was not preliminary to nor in support of any evidence that any profit or personal gain from the operation of the hospital accrued to any trustee, stockholder or individual.

Accordingly, the judgment of the trial court in favor of the plaintiff was reversed and the case remanded for a new trial—*Miller et ux. v. Mohr et al.; Same v. Sisters of St. Frances et al. (Wash.), 89 P. (2d) 807.*

Society Proceedings

COMING MEETINGS

National Medical Association, Houston, Tex., Aug. 12-16. Dr. John T. Givens, 1108 Church St., Norfolk, Va., General Secretary.

Pacific Northwest Medical Association, Spokane, Wash., July 10-13. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Washington State Medical Association, Tacoma, Aug. 26-28. Dr. V. W. Spickard, 1305 Fourth Ave., Seattle, Secretary.

West Virginia State Medical Association, White Sulphur Springs, July 29-31. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

10:205-264 (March) 1940

Direct and Indirect Determinations of Estrogenic and Gonadotropic Hormones. E. von Haam, Columbus, Ohio.—p. 205.
Clinical Application of Hippuric Acid and Prothrombin Tests. A. J. Quick, Milwaukee.—p. 222.
Normal Bromine Content of Blood of Healthy Individuals. Helen L. Wikoff, R. A. Brunner and H. W. Allison, Columbus, Ohio.—p. 234.
Comparison of Tests for Bilirubin in Urine. A. G. Foord and C. F. Baisinger, Los Angeles.—p. 238.
Lupoid Sarcoid Reaction Induced by Foreign Body (Silica). W. M. German, Cincinnati.—p. 245.

10:265-318 (April) 1940

Leukogenic Bone Marrow and Leukocyte Extracts. A. Nettleship, Nashville, Tenn.—p. 265.
Superiority of Kolmer Antigen Reinforced with Acetone Insoluble Lipoids. T. K. Rathmell, Josephine Heacock and Martha Javer Fry, Norristown, Pa.—p. 275.
Study of Sensitivity and Specificity of Simplified Complement Fixation Test for Syphilis. F. Boerner and Marguerite Lukens, Philadelphia.—p. 282.
Rapid Heating of Serum for Kline Tests for Syphilis. C. R. Rein and Clarise E. Hazay, New York.—p. 288.
Twenty-Four Hour Test (Aschheim-Zondek Modification) for Diagnosis of Pregnancy. R. E. Kelso, Washington, D. C.—p. 293.
Value of Sedimentation Time in Suppurations of Anorectal Tissues. R. Turell and A. W. M. Marino, Brooklyn.—p. 300.

American Journal of Surgery, New York

48:327-522 (May) 1940. **Partial Index**

Changing Conception of Cancer of Prostate. R. Gutierrez, New York.—p. 330.
Benign Uterine Hemorrhage in Nonpregnant Women. E. A. Schumann, Philadelphia.—p. 353.
*Active Immunization Against Tetanus by Combined Subcutaneous and Intranasal Routes: Simple Procedure for Maintenance of Protective Antitoxin Titer. H. Gold, Chester, Pa.—p. 359.
Care of Advanced Cancer Exclusive of Relief of Pain by Drugs. H. C. Saltzstein, E. H. Lauppe and M. Z. Feldstein, Detroit.—p. 376.
Protruding Ears: Method of Plastic Correction. G. B. New and J. B. Erich, Rochester, Minn.—p. 385.
Severe Injuries of Face: Some Considerations in Their Diagnosis and Treatment. A. K. Foster Jr., New York.—p. 391.
Method for Control of Postoperative Pain in Hallux Valgus Operations. M. H. Bloomberg, Pittsburgh.—p. 412.
Osteitis Deformans (Paget's Disease of Bones): Review of Fifty-One Cases. E. D. Sugarbaker, New York.—p. 414.
Bladder Disturbances in Diseases of Sigmoid. C. J. E. Kickham and T. F. P. Lyons, Boston.—p. 424.
Treatment of Granulomatous Proctitis of Lymphopathia Venereum. M. H. Shear, York, Pa.—p. 427.
Surgical Management of Duodenal Ulcer. S. Eiss, New York.—p. 429.
New Physical Sign Useful in Early Diagnosis of Perforated Duodenal Ulcer. J. O. Bower, Philadelphia.—p. 436.
Appendicitis Induced by Trauma. J. T. Bate, Louisville, Ky.—p. 437.
Appendical Oxyuriasis. E. I. Greene and J. M. Greene, Chicago.—p. 440.

Active Immunization Against Tetanus.—Gold used a purified, concentrated tetanus toxoid (tetanus toxoid topagen) intranasally for active immunization of 145 human beings. With the patient prone on the table, the head hyperextended, 0.1 cc. (two or three drops) of topagen was introduced into each nostril. The 145 subjects were divided into eight groups: Group A received tetanus toxoid topagen exclusively for the primary course of treatment; groups B, C and D received one subcutaneous injection of alum precipitated tetanus toxoid and two or three daily intranasal instillations of tetanus toxoid topagen; prior to nasal treatment groups E, F, G and H were injected with two or more doses of alum-precipitated toxoid or three or more doses of plain toxoid or plain toxoid with 0.4 per cent alum. The antitoxin titer was determined before the first instillation of tetanus toxoid topagen and thereafter at frequent intervals. The results obtained in groups A, B and C reveal the importance of subcutaneous injection of alum toxoid. It cannot be replaced by three daily intranasal instillations of tetanus toxoid topagen. To render the antitoxin-producing cells of the body capable of responding to intranasally administered toxoid, it is necessary to introduce within the host a definite amount of toxoid. This did not take place in group A. A greater number of subjects reached the 0.1 unit level of antitoxin earlier in group C, in which three daily instillations were given, than in group B, in which there were two daily instillations. Of twenty-four subjects tested seven days after the second injection of alum toxoid, six showed a level of less than 0.1 unit, while the rest had levels of 0.1 unit or more of antitoxin per cubic centimeter of blood serum. Forty-five subjects tested one month after the second injection of toxoid showed more than 0.1 unit of antitoxin. The protection produced by intranasal topagen develops less promptly and is not as lasting as that which follows the injection of a second dose of tetanus alum precipitated toxoid. A substantial immunity developed in the eighty-seven subjects as the result of the previous injection of two or more doses of tetanus toxoid. One week after the first instillation of topagen ten members of group G who had received only one nasal application showed an increase in titer above that of the control test, while fourteen showed no increase over the control values or still had a level of less than 0.1 unit of antitoxin. Eighteen group E subjects who were given two nasal instillations on successive days showed an increase over the control titer, while seven showed only control values. Of the subjects in group E who had received three nasal applications on successive days, twenty-two showed an increase over the control values while four showed either no increase or levels of less than 0.1 unit. In groups E and F (receiving three daily nasal instillations as a "repeat" dose), about the same number of persons showed a further increase in titer between the seventh and the ninth day after the first instillation of tetanus toxoid topagen. In group G, following the administration of the second intranasal dose, there was a definite increase in titer two days later. At the end of two weeks, there was no great difference between the three groups. Nasal instillations of tetanus toxoid topagen on three successive days produce a more rapid rise in antitoxin titer than do two daily or two weekly instillations. Group H subjects who received three weekly nasal applications of toxoid did not show better immediate results than did group G. At the end of three months the patients had an antitoxin titer well above the control value, and twenty-three members of groups E, F and H showed good protection when tested six months after the "repeat" instillation. Therefore, to produce and maintain immunity, it is necessary first to render the subject capable of responding to intranasal instillations of tetanus toxoid topagen by two primary doses of tetanus alum precipitated toxoid given ninety days apart and second to repeat the course of nasal instillations every six months.

Annals of Internal Medicine, Lancaster, Pa.

13:1791-2024 (April) 1940

What Is an Internist? O. H. P. Pepper, Philadelphia.—p. 1791.
Functional Aortic Insufficiency. C. F. Garvin, Cleveland.—p. 1799.
Present Status of the Pulpless Tooth. L. I. Grossman, Philadelphia.—p. 1805.
*Correlation Study Between Retinal Vascular Changes, Electrocardiographic Alterations and Radiologic Heart Size in Essential Hypertension. H. Roesler, G. G. Gibson and R. Hussey, Philadelphia.—p. 1814.
Hypoglycemia Following Encephalitis. J. C. Meakins, Montreal.—p. 1830.
The Problem of Rheumatism and Arthritis: Review of American and English Literature for 1938 (Sixth Rheumatism Review). P. S. Hench, Rochester, Minn.; W. Bauer, Boston; M. H. Dawson, New York; F. Hall, Boston; W. P. Holbrook, Tucson, Ariz.; J. A. Key, St. Louis, and C. McEwen, New York.—p. 1837.

The Retinal Vessels and Heart Size in Hypertension.—Roesler and his associates selected eighty patients with uncomplicated cases of essential hypertension; forty-two were females and thirty-eight were males between the ages of 12½ and 73 years. The patients had a diastolic blood pressure of at least 95 and a systolic of at least 150 mm. of mercury. Examination of the fundus revealed retinal arteriolar changes of the hypertensive type in all cases; seventy-one were classified as having advanced to the stage of sclerosis while the remainder

were in the preorganic stage of the disease. Electrocardiographic study showed final deflection changes in fifty-five. Left axis deviation occurred in sixty-two. Final deflection changes were associated with left axis deviation in forty-six cases, while left axis deviation occurred without associated final deflection changes in sixteen. In nine instances the electrocardiogram was normal. Of the electrocardiograms 31.3 per cent revealed no significant changes. The orthodiagraphic study of fifty-nine patients showed absence of cardiac enlargement in thirteen, a slight to moderate enlargement in thirty and marked enlargement in sixteen. There is a trend toward a positive correlation between electrocardiographic alterations, cardiac enlargement and the grade of the retinal arteriolar changes, and between electrocardiographic alterations and the degree of cardiac enlargement. This correlation was not demonstrated to be of high statistical significance. The irregular distribution of the vascular processes and the lack of parallelism between the systemic and the central retinal artery blood pressures may account for a part of this lack of correlation. As there is an inadequate correlation between the three criteria in question, it seems desirable to have an evaluation of the eyeground, the electrocardiogram and the heart size in addition to the more routine studies when a prognosis for essential hypertension is attempted.

Archives of Dermatology and Syphilology, Chicago

41:817-1000 (May) 1940

Serologic Verification Test in Diagnosis of Latent Syphilis. R. L. Kahn, Ann Arbor, Mich.—p. 817.
Mite Dermatitis. D. E. H. Cleveland, Vancouver, B. C.—p. 831.
Vitamin D in Treatment of Acne. C. A. Simpson, Washington, D. C.; F. A. Ellis, Baltimore, and H. Kirby-Smith, Washington, D. C. —p. 835.
Influence of Sodium Dehydrocholate on Therapeutic Activity of Neoarsphenamine: Experiments with Acute Testicular Syphilis of Rabbits. J. A. Kolmer, with assistance of Anna M. Rule, Philadelphia.—p. 838.
*Vitamin Therapy in Dermatology, with Particular Reference to Vitamin D in Treatment of Acne and of Diseases Due to Altered Usage of Calcium. M. T.-R. Maynard, San Jose, Calif.—p. 842.
Pemphigus Foliaceus (Fogo Salvagem): Endemic Disease of State of São Paulo (Brazil). J. P. Vieira, São Paulo, Brazil.—p. 858.
Metabolic Cutaneous Calcinosis: Report of Case with Scleroderma. T. N. Graham, New York.—p. 864.
Leishmaniasis Recidiva Cutis: Leishmanid. C. Berlin, Tel Aviv, Palestine.—p. 874.
Wood Tick Simulating Pedunculated Tumor. R. Friedman, Philadelphia. p.—887.
Passive Transfer of Light Sensitivity: Report of Case. J. L. Callaway, Durham, N. C.—p. 889.
Cheilitis and Dermatitis from Tooth Paste. L. G. Beinhauer, Pittsburgh. —p. 892.
Cultural Variations of Trichophyton Purpureum (Bang), with Discussion of Recognizable Features. G. M. Lewis and Mary E. Hopper, New York.—p. 895.
Public Health Problems in Control of Syphilis. L. W. Shaffer, Detroit. —p. 904.
*Excretion of Sulfanilamide Through Skin. T. Cornbleet, Chicago.—p. 912.
Hypertherm Treatment of Cutaneous Diseases. E. B. Tauber and L. Goldman, Cincinnati.—p. 919.

Vitamin Therapy in Dermatology.—Maynard observed for three months two groups of seventy and sixty patients respectively with acne treated with vitamin D. In the first group 75.6 and in the second 83.4 per cent showed satisfactory results; that is, thirty-two patients of each group were healed at three months. A similar study of twenty-seven patients with acne treated with carotene gave 50 per cent satisfactory results. In the first series an average dose of from 20 to 30 drops (10,000 to 15,000 U. S. P. units) of a vitamin D preparation (viosterol in oil) was given daily. Since then 30 drops (10,000 U. S. P. units) of a synthetic crystalline vitamin D_2 product (calciferol) has been given each morning for three weeks and then 20 drops twice daily (12,500 U. S. P. units). All doses were taken in milk. Three patients with localized scleroderma were satisfactorily treated with vitamin D alone. Sclerosis following an overdose of roentgen therapy gave a promising response in two cases. One patient with pemphigus in the early stages recovered after taking large doses of vitamin D. She had a relapse when the vitamin was discontinued and recovered when treatment was resumed. A young teacher with acquired leukonychia totalis regained normal nail structure after treatment with vitamin D. The majority of patients with psoriasis did not get worse in the winter on vitamin D doses of from 10,000 to 12,000 units throughout the season. Heavier doses are probably justifiable in selected cases. The vitamin has been administered to children with atopic flexural eczema with substantial benefit. It cannot be stated that lack of vitamin D or calcium alone is responsible, for acne is not observed in rachitic infants. It also is not a factor in osteoporosis or osteomalacia, although these diseases are associated with vitamin D and calcium deficiencies. Acne is a disease occurring in the period of sexual and glandular activity. It is apparently associated with cyclic sexual activity in males and is possibly made worse by excessive sexual practices. The greatest benefit of using vitamin D in acne, in the author's opinion, has been the avoidance of roentgen therapy, which too often becomes the master rather than the servant of the physician.

Cutaneous Excretion of Sulfanilamide.—Cornbleet determined the partition and storage of sulfanilamide in the blood and skin of dogs and its concentration and persistence in the blood, unfiltered sweat and filtered sweat of human beings. In some cases a sweat bath caused the reappearance of sulfanilamide in the blood several days after the drug had disappeared from it. Sulfanilamide appears in the skin soon after its administration. The quantity deposited there accounts for a large share of the entire amount present in the body. Sulfanilamide may be of value, therefore, in certain kinds of infections within the skin. Through the medium of sweat, sulfanilamide is rapidly made available at the surface of the skin. There is some clinical evidence, and more may be expected in the future, to show that sulfanilamide is of benefit for the "streptococcids," or superficial streptococcic infections of the skin and its folds. Untoward reactions occur with sufficient frequency to withhold its use in the treatment of the simpler cutaneous infections that respond to less dangerous applications and drugs.

Archives of Ophthalmology, Chicago

23:899-1130 (May) 1940

*Rosacea Keratitis and Conditions with Vascularization of Cornea Treated with Riboflavin. L. V. Johnson and R. E. Eckardt, Cleveland.—p. 899.
Posture Treatment of Iris in Lever Action Intracapsular Extraction of Cataract. K. C. Dutt, Sonpur Raj, India.—p. 908.
Experimental Production of So-Called Bullous Keratitis. D. G. Cogan, Boston.—p. 918.
Vacuum Massage of Eyeball. T. J. Dimitry, New Orleans.—p. 926.
Acute Exudative Choroiditis: Pathologic Physiology; Treatment with Vasodilators. W. F. Duggan, Utica, N. Y.—p. 930.
New Method of Subjective Refraction Involving Identical Technics in Static and in Dynamic Tests. M. Luckiesh and F. K. Moss, Cleveland.—p. 941.
Primary Tumors of Optic Nerve (Phenomenon of Recklinghausen's Disease): Clinical and Pathologic Study with Report of Five Cases and Review of Literature. F. A. Davis, Madison, Wis.—p. 957.
Induced Size Effect with Eyes in Asymmetric Convergence. K. N. Ogle, Hanover, N. H.—p. 1023.
*Treatment of Vernal Catarrh with Solid Carbon Dioxide. V. La Rocca, New York.—p. 1039.
Paralysis of Divergence. M. B. Bender and N. Savitsky, New York. —p. 1046.
Chorioretinal Arteriolar Necrosis in Malignant Hypertension: Report of Case. M. Cohen, New York.—p. 1052.
Congenital and Acquired Anomalies of Optic Disk. F. C. Cordes, San Francisco.—p. 1063.

Riboflavin for Rosacea Keratitis and Corneal Vascularization.—In treating thirty-six patients with rosacea keratitis Johnson and Eckardt added from 3 to 4.5 mg. of riboflavin to the diet. Nine of these patients had some cutaneous rosacea of the face. The corneal lesions of thirty-two healed promptly, with no recurrences during riboflavin therapy. Four patients responded slowly or not at all and failed to remain free from symptoms. Of the nine with concomitant cutaneous rosacea four showed satisfactory cutaneous improvement. The five who were not improved had achlorhydria, as demonstrated by the histamine test. The four patients who remain free from cutaneous rosacea cannot be persuaded to have an analysis of their gastric contents. Such an analysis was done for six of the thirty-two patients who remained free from ocular rosacea and normal levels of gastric hydrochloric acid were observed. Only two of the thirty-six patients studied gave a history of having eaten adequate amounts of egg white, liver and milk. These two patients did not improve on the addition of riboflavin to their diet, and an analysis of their gastric contents after the administration of 3 mg. of histamine did not show any free hydro-

chloric acid. Emphasis is placed on the similarity between rosacea keratitis and the ocular condition of rats in which ulcers developed because of dietary riboflavin deficiency. The mechanism is possibly that of inadequate oxidation of enzymes, such as Warburg's yellow enzyme, in the avascular cornea. Rosacea keratitis may be the direct result of riboflavin deficiency. Riboflavin therapy may likewise be of value in certain other forms of corneal vascularization. It apparently is of no value in conditions accompanied by large blood vessels or in which scar tissue is present. Continuous therapy is advisable for constant benefit.

Solid Carbon Dioxide for Vernal Catarrh.—La Rocca used solid carbon dioxide in the treatment of ten patients with vernal catarrh. The catarrh was of the tarsal type in nine cases and of the limbic in one case. The response to the therapy was favorable. It was not wholly successful in two patients, but in these the number of treatments was insufficient. The only patient with the limbic type of catarrh was cured after six treatments. There were no relapses among the cured patients after four years. Solid carbon dioxide has a beneficial effect on the vegetations of vernal catarrh because of its freezing and not because of its chemical properties. In freezing the tissue, the carbon dioxide causes thrombosis of the small vessels of the vegetations, and consequently necrosis of the cells. New connective tissue is formed where the vegetations have been, and whitish shiny scars can be seen in the healed conjunctivas. The failure of other treatments for vernal catarrh (radium, allergic desensitization, vaccines, drugs or transplants of mucous membranes) is probably due to the fact that the pathologic process of vernal catarrh does not lie in the conjunctiva alone but deeper, in the superficial layers of the tarsus.

Endocrinology, Los Angeles

26:735-940 (May) 1940. **Partial Index**

Effect of Human Diabetic Plasma on Blood Sugar Curves in Rabbits Following Insulin. A. Marble, Alison T. Fernald and Rachel M. Smith, Boston.—p. 735.
Reverse or Paradoxical Blood Sugar Response to Ingested Glucose: Correlation of Laboratory and Clinical Findings on Forty Patients. H. Wheelon, Seattle.—p. 743.
Bio-Assays for Urinary Androgens: Comparison of Results in Normal Men with Those Having Endocrine Disturbances. E. P. McCullagh and H. V. Lilga, Cleveland.—p. 753.
*Percutaneous Administration of Testosterone Propionate for Dysmenorrhea. A. R. Abarbanel, Baltimore.—p. 765.
Maintenance of Corpus Luteum Function in Women by Estrogenic Substances. A. Westman, Lund, Sweden.—p. 774.
Thyroid Gland Disturbance as Cause of Unexplained Fever. R. C. Moehlig, Detroit.—p. 783.
Report of Three Cases of "Clinical" Addison's Disease Surviving More Than Fifteen Years. L. G. Rowntree, Philadelphia.—p. 793.
Benzedrine Sulfate in Obesity. G. Rosenthal and H. A. Solomon, New York.—p. 807.
Inhibition of Pelvic Changes Occurring During Pregnancy in Mice by Testosterone Propionate. W. U. Gardner and J. Van Heuverswyn, New Haven, Conn.—p. 833.
Further Studies on Refractory State Developed Following Repeated Injections of Adrenal Extract. F. A. Hartman, Lena A. Lewis and Jane E. Gabriel, Columbus, Ohio.—p. 879.
Cell Contents of Cortex of Suprarenal Gland. Marjorie V. N. Sudds, London, England.—p. 895.
Effect of Adrenalectomy on Ketosis Produced in Rats by Anterior Pituitary Extract. R. A. Shipley, Cleveland.—p. 900.

Testosterone Propionate Percutaneously for Dysmenorrhea.—Abarbanel treated ten patients with dysmenorrhea with or without premenstrual tension by the percutaneous administration of testosterone propionate. The method is indicated when patients object to injections, when they cannot come regularly to the dispensary, in those previously treated by injection with few residual symptoms and in those who, having to leave town, cannot secure the injections. Each patient is urged to receive parenteral therapy first, as the required dosage by this route affords a guide to the amount necessary percutaneously. Patients who do not respond to parenteral therapy usually will not respond to cutaneous administration. The dosage required by the percutaneous route is from three to six times as great as that which is necessary for the subcutaneous route, depending mainly on the vehicle. Sesame oil has proved more effective than any of the ointment bases tried. The areas utilized for percutaneous administration have been the axillary region, the inner part of the thighs or the deltoid region. If the gynecologic examination is negative, the patient is told to begin percutaneous administration from ten days to two weeks before the expected onset of the next menstruation. If the uterus is small or anatomically misplaced, or both, or if the patient is 30 or more years old, she is advised to begin applications from four or five days after the period is over and to continue them for the remainder of the cycle. The total dosage per cycle has ranged from 20 to 90 mg. of the testosterone. Each patient must be treated individually and no set dosage schedule can be outlined. After three successive periods with little or no discomfort, therapy is discontinued for a month to observe whether improvement is maintained. If not, treatment is repeated. Only one of the author's ten patients was not relieved. The manner in which the dysmenorrhea is relieved will not be clear until it is definitely known what factors initiate the pain. It is reasonable to believe that the relief of the dysmenorrhea may be partly, or even entirely, caused by certain as yet unknown effects of testosterone propionate on the nervous system. Why the relief is permanent in some women is still beyond explanation. The patients treated showed no signs of masculinization. The only possible sign of defeminization was the loss of nymphomaniac tendencies in one patient.

Florida Medical Association Journal, Jacksonville

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Atrophic Rhinitis and Otosclerosis: Treatment with Estrin Alone and Combined with Other Therapy. S. B. Forbes, Tampa.—p. 487.
Hemorrhage Complicating Empyema Thoracis: Report of Fatal Case. S. G. Kennedy and J. H. Pierpont, Pensacola.—p. 492.
Osteo-Arthritis. W. H. Hoskins, Venice.—p. 496.
Ethmoiditis. N. W. Gable, St. Petersburg.—p. 498.

Illinois Medical Journal, Chicago

77:385-548 (May) 1940. **Partial Index**

The Legislative Activities of the Society Is a Public Service. J. R. Neal, Chicago.—p. 413.
Medical Education in Illinois During the Last 100 Years. F. C. Zapffe, Chicago.—p. 414.
Hospital Development in Illinois. H. F. Sanger, Chicago.—p. 417.
One Hundred Years of Public Health in Chicago 1840-1940. H. N. Bundesen, Chicago.—p. 424.
A Century's Development of Public Welfare Work and Projects (1840-1940). C. F. Read, Elgin.—p. 439.
A Century of Tuberculosis in Illinois. F. Tice, Chicago.—p. 455.
The Physician and the Social Service Agencies. M. Fishbein, Chicago.—p. 466.
A Survey of Pediatrics During the Past 100 Years. I. A. Abt, Chicago.—p. 485.
Dilantin (Sodium Diphenylhydantoinate) in Treatment of Epilepsy. J. A. Morgan, Elgin.—p. 542.

Indiana State Medical Assn. Journal, Indianapolis

33:227-284 (May) 1940

Sulfanilamide in Old Trachoma. J. R. Kettler and C. W. Rutherford, Indianapolis.—p. 227.
Syphilis of Eye. E. W. Dyar and J. E. Dalton, Indianapolis.—p. 229.
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Ophthalmia Neonatorum. E. E. Holland, Richmond.—p. 236.
Practical Points in Refraction for the General Practitioner. B. D. Ravdin, Evansville.—p. 237.
Sulfanilamide and Neoprontosil: Recent Advance in Ophthalmic Therapeutics. C. W. Rutherford, Indianapolis.—p. 241.
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Iowa State Medical Society Journal, Des Moines

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Myasthenia Gravis: Case with Necropsy. R. C. Scannell, Carroll.—p. 154.

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A History of English Medicine from 1460 to 1860. C. B. Luginbuhl, Des Moines.—p. 181.
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Technic of Examination of Spine and Manipulative Treatment. L. J. Miltner, Davenport.—p. 193.
Adherent Placenta and Obstetric Shock. S. W. Barnett, Cedar Falls.—p. 197.
Cancer of Stomach. F. W. Mulsow, Cedar Rapids.—p. 199.

Journal of Infectious Diseases, Chicago

66:97-192 (March-April) 1940. **Partial Index**

Variety of Types in Human Paratyphoid C Infections. F. Schiff and I. Saphra, New York.—p. 97.
Hydrogen Ion Concentration Stability of Virus of Equine Encephalomyelitis (Eastern Strain) Under Various Conditions. H. Finkelstein, W. Marx, Dorothy Beard and J. W. Beard, Durham, N. C.—p. 117.
Fersistence of Vaccine Virus in Rabbits Immunized to Vaccinia by a Previous Infection and Relationship of Immunity to Latent Virus. J. M. Pearce, Brooklyn.—p. 130.
Sulfone Compounds in Treatment of Experimental Pneumococcic Infections. G. W. Raiziss, J. A. Kolmer and Anna M. Rule, Philadelphia. —p. 138.
Neutralization Test in Lymphogranuloma Venereum. Enid Rodaniche, Chicago.—p. 144.
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Occurrence, Clinical Characteristics and Therapy of Pneumococcus XXXIII Pneumonia. A. Davidson and J. G. M. Bullowa. New York. —p. 178.
Distinct Type of Pneumococcus Immunologically Related to Type IX (Cooper). Annabel W. Walter, Katharine D. Blount, Marian W. Beattie and Hannah Y. Cotler, New York.—p. 181.
Action of Gastric and Salivary Mucin on Phagocytosis. Ruth Tunnicliff, Chicago.—p. 189.

Journal of Investigative Dermatology, Baltimore

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Experimental Intracutaneous Tuberculosis in White Rat. W. H. Feldman and A. G. Karlson, Rochester, Minn.—p. 107.
Contact Reactions in Atopy: II. Incidence of Contact Reactions with Various Allergens. M. Albert and M. Walzer, Brooklyn.—p. 119.
Nails and Nail Changes: II. Modern Concepts of Anatomy and Biochemistry of Nails. H. Silver and B. Chiego, New York.—p. 133.

New England Journal of Medicine, Boston

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*Clinical and Laboratory Studies on Use of Serum and Sulfapyridine in Treatment of Pneumococcic Pneumonias. M. Finland, F. C. Lowell and W. C. Spring Jr., Boston.—p. 739.
*Vitamin C Deficiency in an Otherwise Normal Adult. J. H. Crandon and C. C. Lund, Boston.—p. 748.
End Results in Injection Treatment of Inguinal Hernia. H. K. Sowles and W. M. Shedden, Boston.—p. 753.
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Device for Insuring Constant Gastric Suction. R. S. Hormell, Boston. —p. 759.
Diagnosis and Treatment of Nutritional Deficiency. A. P. Meiklejohn, Boston.—p. 760.

Serum and Sulfapyridine in Pneumococcic Pneumonias.—According to Finland and his collaborators, most workers are agreed that a definition of the conditions under which the use of serum alone, sulfapyridine alone, or the combination of the two, will give the optimum benefit in pneumonia must await the accumulation of a large amount of data subjected to detailed and critical analysis. They present a résumé of the laboratory and clinical studies conducted at the Boston City Hospital during 1938-1939. The laboratory studies suggest that the combination of serum and sulfapyridine represents the optimum therapy in pneumococcic infections. Serum and sulfapyridine for adults with pneumococcic pneumonia are about equally effective when used alone or in combination, while for patients with the worst prognosis the combination of serum and sulfapyridine is more effective than is either agent alone. Instances in which the combined therapy was most effective included patients with bacteremia, particularly those over 50 years of age, those in whom treatment was started late and those with blood cultures yielding moderate or large numbers of pneumococci; patients in whom more than one lobe was involved; most patients over 60 years of age who had more than a mild infection, and patients with pneumonia due to types II, III or possibly V. Since sulfapyridine has a wide range of effectiveness, is simple to administer and is inexpensive, it is advisable to start treatment with it in every case of pneumonia as soon as the clinical diagnosis has been made, but only after blood has been taken for culture and every effort has been made to obtain sputum for typing. In cases of severe involvement and in pneumonias complicating pregnancy and the puerperium, specific serum should be given as soon as the causative types have been determined or the results of blood cultures have become known. Patients in whom continued drug therapy may prove harmful are best treated with serum as soon as the type is known. They include patients with renal or hepatic disease and those with severe anemias or other blood dyscrasias. The establishment of a balance of antibodies will permit early withdrawal of the drug and thus minimize its ill effects. In all other cases due to specific types of pneumococci, serum should be used if there is no satisfactory response after from twenty-four to thirty-six hours of drug therapy.

Vitamin C Deficiency in Normal Adult.—Crandon and Lund report a case of a normal active adult who placed himself on a vitamin C free diet supplemented by the other known vitamins. No signs or symptoms of scurvy developed over a period of four months, during which the ascorbic acid content of the plasma, white cells and platelets fell to zero. An experimental wound made after twelve weeks of diet, when the plasma readings had been zero for at least forty-four days, showed good healing both grossly and microscopically when a biopsy specimen was taken eleven days later. No lack of intercellular substance could be seen. Analysis of the muscle removed showed no trace of ascorbic acid. Except for the changes in vitamin C concentration, extensive clinical studies revealed only a transient fall in hemoglobin (reversed by iron) and a fall in basal metabolic rate and body weight. While a single case does not permit positive conclusions, the authors suggest that in the absence of multiple avitaminosis, infection or growth factor, a plasma ascorbic acid level of below 0.5 mg. per hundred cubic centimeters is not necessarily dangerously low. Plasma ascorbic acid levels are a poor index of clinical vitamin C deficiency; they probably indicate the degree of saturation, which should not be confused with deficiency. The apparent ascorbic acid content of the circulating white cells and platelets may fall to zero without the appearance of clinical scurvy in an adult on an adequate intake of vitamins other than vitamin C.

New Orleans Medical and Surgical Journal

92:607-664 (May) 1940

Plea for Medical Supervision and Control of Health Agencies of Louisiana. D. B. Barber, Alexandria, La.—p. 607.
Interstate Endorsement. R. B. Harrison, New Orleans.—p. 609.
Lobar Pneumonia: Pathology. A. V. Friedrichs, New Orleans.—p. 612.
Id.: X-Ray Diagnosis. M. D. Teitelbaum, New Orleans.—p. 616.
Specific Treatment of Pneumococcic Pneumonia: Review of Recent Literature and Analysis of 100 Cases. J. O. Weilbaecher Jr., New Orleans.—p. 618.
Diagonsis of Gout. M. W. Matthews, Shreveport, La.—p. 624.
*Hyperpyrexia: Indications and Complications with Evaluation of Results Based on 5,500 Fever Sessions. J. A. Trautman, New Orleans.—p. 630.
Recent Advances in Study of Pulmonary Diseases. J. L. Wilson, New Orleans.—p. 637.

Hyperpyrexia.—During the last ten years hyperpyrexia has been used in the treatment of about fifty diseases, but it has proved beneficial in only a few. Trautman concludes from 5,500 artificial fever sessions given 985 patients at the Marine Hospital that the air-conditioned cabinet is an effective means of inducing therapeutic hyperpyrexia at fever levels up to 107 F. Only one death occurred among the 985 patients. Hyperpyrexia appears to be a valuable therapeutic adjunct in gonorrhea, syphilis and acute exudative conditions of the eye. Sufficiently good results have been obtained in such conditions as venereal lymphogranuloma, neuritis, arthralgia, myositis, acute and chronic infectious arthritis, acute rheumatic fever, chorea, undulant fever, meningococcic septicemia and asthma to warrant its further study. The contraindications are individual. Thirty different diseases have been treated by artificial fever at the Marine Hospital. The largest group, consisting of 567 patients, was that of gonococcic infections and their complications. Of 352 patients having five hour sessions at from 106 to 107 F., with an average number of 6.5 fever sessions, 304 received adequate observation and treatment and of these 252, or 82.5 per cent, recovered. Forty-two patients received sulfanilamide and, fail-

ing to respond to this, were given an average of 6.6 fever sessions at from 106 to 107 F. for five hours. Thirty-six of these were under adequate observation and treatment, and twenty-six, or 72.2 per cent, recovered. Of the 173 patients who received sulfanilamide or sulfapyridine and, failing to respond, were given an average of 2.6 ten hour sessions of fever at from 105 to 107 F. alone or with additional chemotherapy 156, or 94.5 per cent, recovered. In a follow-up study 275 of the 567 patients have been rechecked as to recurrence of gonorrhea. Of these patients 241 completed their treatment from one to five and a half years ago and thirty-four from three months to one year ago. Of the entire group, nine, or 3.2 per cent, had a recurrence. An additional eleven, or 3.9 per cent, were reinfected. Encouraging results were obtained in a group of 129 patients having gonorrheal arthritis. Of these, 102 were markedly improved or recovered. A follow-up of fifty-two for from one to five and a half years showed that all except two had maintained their degree of improvement. Of 160 epididymal gonococcic complications all but five were promptly relieved by fever therapy. Ninety-eight cases of acute gonorrheal prostatitis showed excellent results from fever therapy. Excellent results were also obtained in gonococcic seminal vesiculitis, balanoposthitis, severe inguinal adenitis, periurethral abscess and pelvic inflammatory disease. Since no form of therapy in syphilis can be evaluated in five and a half years, which is the longest period that any of the 187 patients with this disease was observed, it is impossible to determine what the final results of fever therapy will be. Fever therapy combined with chemotherapy appeared to be of value in the treatment of dementia paralytica, tabes dorsalis, asymptomatic neurosyphilis, acute syphilitic eye conditions, arsenical intolerance and seroresistant syphilis.

North Carolina Medical Journal, Winston-Salem

1:229-280 (May) 1940

The University of North Carolina: The Old Medical School: Dr. Richard H. Whitehead and Dr. Charles S. Mangum. J. K. Hall, Richmond, Va.—p. 229.
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Treatment of Diabetes. D. E. Best, Goldsboro.—p. 241.
The Present Status of Anesthesia. A. C. Ambler, Asheville.—p. 244.
Surgery in Diabetes. W. H. Sprunt Jr., Winston-Salem.—p. 249.
The Private Medical, Dental and Nursing Practitioners. J. B. Sidbury, Wilmington.—p. 251.
Report of High Point Pellagra Clinic. F. R. Taylor, High Point.—p. 254.

Public Health Reports, Washington, D. C.

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Existence and Use of Hospital Facilities Among Several States in Relation to Wealth as Expressed by Per Capita Income. E. H. Pennell, J. W. Mountin and Kay Pearson.—p. 822.

Southern Surgeon, Atlanta, Ga.

9:301-380 (May) 1940

Surgical Aspects of Epilepsy Problem. C. Pilcher, Nashville, Tenn.—p. 301.
Pentothal Sodium Oxygen Anesthesia in Major Surgery. C. N. Carraway, Birmingham, Ala.—p. 312.
Simple Technic for Glass Ball Implantation Following Enucleation of Eyeball. R. O. Rychener, Memphis, Tenn.—p. 321.
Splenic Anemias. J. D. Rives, New Orleans.—p. 328.
Pelvic Supports: Their Injury and Repair. C. J. Andrews, Norfolk, Va.—p. 335.
Premature Ageing Associated with Thyroid Dysfunction. J. K. McGregor, Hamilton, Ont.—p. 342.
Structure of Knee Joint in Hereditary Arthrodysplasia. J. H. Venable, Atlanta, Ga.—p. 345.
Consideration of Terminology and Management of Anal Fistulas. L. A. Buie, Rochester, Minn.—p. 351.
Prostatic Disease, with Special Reference to Various Causes and Types as Well as Their Treatment. R. B. Henline, New York.—p. 360.

Surgery, Gynecology and Obstetrics, Chicago

70:859-986 (May) 1940

*Controlled Fluid Therapy; with Hematocrit, Specific Gravity and Plasma Protein Determinations. C. R. Drew, J. Scudder and J. Papps, New York.—p. 859.
*The Problem of Tuberculous Empyema Thoracis. A. M. Vineberg and M. Aronovitch, Montreal.—p. 868.
Infections of Meninges and Brain of Pharyngeal Origin. H. Brunner, Chicago.—p 881.
Foreign Body Arthritis. J. A. Key, St. Louis.—p. 897.
*Effect of Subcastrative Roentgen Therapy on Ovarian Physiology. J. Rock, M. K. Bartlett, A. G. Gauld and R. N. Rutherford, Boston.—p. 903.
Roentgenologic Study of Intestinal Obstruction. H. Brunn and J. Levitin, San Francisco.—p. 914.
Comparison of Fibrinogen and Prothrombin Levels of Maternal and Cord Blood at Delivery. A. Rush, Chicago.—p. 922.
Effects of Experimental Chronic Hyperparathyroidism on Kidney of Dog. P. R. Leberman, Philadelphia.—p. 925.
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Surgical Treatment of Recurrent Dislocation of Shoulder Joint. S. Orell, Stockholm, Sweden.—p. 945.
Special Features in Management of Surgically Difficult Malignant Growths and Kindred Lesions of Pelvic Viscera. A. H. Curtis, Chicago.—p. 948.
Results of Treatment of Bilocular and Direct Inguinal Hernias. R. L. Ramos and C. C. Burton, Dayton, Ohio.—p. 953.
Pulmonary Embolism: Statistical Review of Cases from 1929 Through 1938. W. N. Graves, Duluth, Minn.—p. 958.
Vitallium Nails in Fractures of Hip. C. S. Venable and W. G. Stuck, San Antonio, Texas.—p. 964.
Results of Surgical Treatment of Recurrent Inguinal Hernia. C. C. Burton and R. L. Ramos, Dayton, Ohio.—p. 969.

Controlled Fluid Therapy.—Drew and his associates warn that in fluid therapy the hematocrit, the specific gravity and the plasma protein determinations should not interpret the state of dehydration without considering the history and the clinical picture of the patient. These procedures should aid, not substitute, other well established diagnostic procedures. Certain well defined patterns have recurred many times in a large series of such cases, and these have proved of great aid in the interpretation of the values of the aids in any specific case. In simple dehydration (whether from lack of fluid intake, diarrhea, excessive sweating, severe vomiting or shock of psychogenic, traumatic or postoperative origin) uncomplicated by hemorrhage there is a rise in the cell volume, the specific gravity of whole blood and of plasma and the protein percentage of plasma. In the first three of these conditions, treatment consists in administering fluids until these elevated values tend to approach normal. In shock, treatment to be rational must overcome the severe arteriolar and venular spasm, the capillary paralysis and dilatation and the great loss of circulating blood volume. Hypertonic sodium chloride is particularly effective in relieving the arteriolar spasm, in decreasing the viscosity of the blood and in aiding the return of fluid from the tissues into the circulation. It should be used cautiously in collapse due to dehydration. Adrenal cortex extract (eschatin) has proved valuable in restoring capillary tone, raising the blood pressure and redistributing electrolytes. To maintain any gain initiated by the sodium chloride and adrenal cortex extract blood transfusions are given as indicated by repeated blood studies. In hemorrhage there is an immediate fall in the specific gravity of the whole blood and a drop in the cell volume as determined by the hematocrit. The changes of the specific gravity of the plasma are less marked. Treatment consists of restoring blood volume by transfusions. It is of utmost importance to determine whether shock is complicated by hemorrhage or not. When not only loss of fluid but loss of protein exists, there is a tendency for the hematocrit curve to rise while the protein values continue to fall. In these cases the extreme hemoconcentration and shock must be combated by adequate administration of fluid, but the already lowered protein concentration must not be reduced to the edema level. When acute changes take place in chronic disease in which anemia already exists, and probably hypoproteinemia, any one of the ordinary tests—erythrocyte count, hemoglobin or hematocrit determination—will not evaluate the true state of hydration. A combination of all is necessary and particularly determination of the specific gravity of the plasma. Treatment consists in reducing the protein values to approximately normal levels and restoring the cellular elements of the

blood. Impending edema may be suspected by a gradually falling plasma protein level. When the hematocrit reading shows more than 60 per cent volume, it is unwise to give large quantities of hypertonic solutions, as this may bring into the circulation cell water rich in electrolytes, which is definitely toxic when present in the plasma in quantities greater than normal. The severely ill patient may not be able to utilize fluids of any type or quantity until the severe spasm of the peripheral vessels is relieved and the circulation of the sequestrated blood in the paralyzed peripheral capillaries has returned. The only safe procedure is to measure the degree of hemoconcentration or anemia and the degree of dehydration or edema, institute the therapy suggested by the changes found, follow the curve of progress by repeated determinations and evaluate the state of hydration day by day or hour by hour if need be.

Tuberculous Empyema Thoracis.—Vineberg and Aronovitch state that patients with tuberculous empyema are often seen when operative procedures cannot be carried out. Prolonged, unsuccessful, palliative treatment is known to lead to a high mortality. There is a tendency to continue such treatment for months without benefit to the patient. The disease spreads, or the resistance is so lowered that more radical measures are impossible. Thirty-seven cases (2.2 per cent) of tuberculous empyema occurred in the authors' series of 1,371 cases. If the cases of artificial pneumothorax are not included, the incidence is reduced to 0.5 per cent. If only pneumothorax cases are considered, the incidence is 9.9 per cent. The development of a tuberculous empyema signifies the presence of a bronchopleural fistula. The longer the fistula remains, the greater are the chances of mixed pleural infection. Tuberculous empyema, like tuberculosis elsewhere, is not a static disease but one which is constantly changing. A tuberculous pneumonic disease is always associated with some infection of the visceral pleura. If the visceral and parietal pleural surfaces are in contact, this may result only in adhesions. When there is a large amount of exudation before adhesions are formed, the exudate collects in the pleural cavity as an empyema. If the pleural surfaces are separated, as in artificial pneumothorax, the exudate collects at the bottom of the pleural cavity, forming a pyopneumothorax. Pneumothorax predisposes to the formation of tuberculous empyema. In active pulmonary tuberculosis the most important preventive measure is the avoidance of effort, especially activities which cause sudden changes in intrapleural pressures. A sudden cough or straining effort may result in the rupture of an adhesion. Such adhesions may contain lung tissue or may rupture at their pulmonary attachments, thus creating bronchopleural fistulas. Adhesions under tension should be cut when possible. If pneumothorax is not efficient it should be abandoned and replaced by surgical collapse. If the pneumothorax is efficient it may be continued, but the activity of the patient should be drastically curtailed. The majority of their cases of tuberculous empyema developed in cases in which pneumothorax therapy was continued long after it should have been abandoned. Such continuance may result in spread of the disease from an uncollapsed cavity and/or tuberculous empyema secondary to ruptured adhesions and the resultant bronchopleural fistula. There were thirteen cases of unilateral pure tuberculous empyema complicating artificial pneumothorax. The duration of the pneumothorax to the time of onset of fluid ranged from nine days to sixty-five months. The time interval from the first appearance of fluid to the onset of empyema varied from two weeks to fourteen months and the period during which surgical intervention might have been beneficial varied from one month to two years. Surgical intervention is not as urgent in these cases as it is in those presenting mixed tuberculous empyema. Under conservative treatment several of these cases developed into cases of bilateral involvement and consequently became inoperable. Six of the cases were fatal, the course of the disease in three cases is downhill, in three the disease has been arrested and in one it is stationary. Of the arrested cases thoracoplasty was performed in two and one was cleared up by aspiration and air replacement. Two of the seven cases which became bilateral did so shortly after thoracotomy. There were four cases of unilateral mixed tuberculous empyema complicating artificial pneumothorax. The duration of the pneumothorax up to the time of onset of fluid ranged from four to forty-eight months. Thoracoplasty could have been performed at the onset. In only one case did the period of operability extend to three months. All the patients died soon after the onset of the empyema—one within five weeks. Two of the four cases became bilateral; in one case a thoracotomy and phrenic exeresis were performed and the patient survived for one year. Of the twenty-seven cases of tuberculous empyema with bilateral involvement nine were unilateral when first seen; nineteen presented pure and eight mixed empyemas. In twenty-two cases empyema occurred during the course of artificial pneumothorax and in five it resulted from spontaneous pneumothorax. There have been seventeen deaths, the course in seven is downhill, in two the disease has apparently been arrested and one case has not been traced. In both of the arrested cases thoracoplasty has been done; one of these presented a mixed and the other a pure tuberculous empyema. It is significant that five of the six patients who were cured had undergone thoracoplasty. The authors are convinced that many of the patients would have been benefited by thoracoplasty had the procedure been instituted sooner.

Roentgen Therapy and Ovarian Physiology.—Rock and his co-workers used subcastrative doses of x-rays over the ovaries and pituitary in the treatment of twenty-seven patients with menstrual disorders with or without sterility. Twenty-two had proved anovulatory flow or flow which was predominantly anovulatory with occasional ovulatory cycles. No endometrium was obtained on repeated efforts from one woman, and this was presumed to be an instance of primary pituitary deficiency. Five patients had cyclic ovulation but with associated disturbances: sterility, polymenorrhea or hypermenorrhea. None of these five patients was relieved or cured. Twelve of the patients with faulty ovulation were cured, and the treatment of ten resulted in failure. If an ovulatory cycle could not be proved within three months after the completion of roentgen therapy the case was considered a failure. Patients considered cured were those in whom biopsies demonstrated ovulatory cycles three months or more after roentgen therapy, those of sterility in which pregnancy proved ovulation or those who acquired after treatment the molimina of menstruation with periodicity of characteristic flow. Three, or 13.6 per cent, of the patients became pregnant. The figures of cure are well above the most optimistic results reported from endocrine treatment alone. Many of the cured women were under endocrine treatment before roentgen therapy was tried. Regular ovulatory cycles began within from two to ten weeks following the first roentgen treatment. No apparent harm resulted when a subsequent series of treatments with the same dosage was given after an interval of from two or three months. Three doses, each from 50 to 60 roentgens, given over the ovaries seem harmless to the ovaries of women less than 35 years of age. Women older than this may suffer temporary or permanent cessation of follicular function. The authors believe that roentgen treatment of the pituitary offers no additional benefit. To explain the good results, they postulate a destruction by x-rays of persisting mature follicles, thus allowing a new cycle of follicle development and maturation to take place.

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Effect of Vaccination of Guinea Pigs with Vole Acid-Fast Bacillus on Subsequent Tuberculous Infection. A. Q. Wells and W. S. Brooke. —p. 104.
Cultivation of Lymphocytic Choriomeningitis in Tissue Culture. F. O. MacCallum and G. M. Findlay.—p. 110.

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Variation with Wavelength of Biologic Effect of Radiation (Measured by Inhibition of Division in Tissue Cultures). I. Lasnitzki and D. E. Lea.—p. 149.
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*New Conception of Parathyroid Function and Its Clinical Application: Preliminary Report on Results of Treatment of Generalized Fibrocystic and Allied Bone Diseases and of Rheumatoid Arthritis by Aluminum Acetate. A. J. Helfet.—p. 651.
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Deep Diving. P. K. Fraser.—p. 781.

Parathyroid Function.—Helfet studied the theory that solution of parathyroid exerts its primary effect on the phosphorus metabolism and not on the control of the level of blood calcium. The theory suggested is (1) that solution of parathyroid controls the inorganic phosphate level of the blood, (2) it prevents this level from rising to a degree which would upset any metabolic process in which the phosphates are concerned, (3) that an accumulation of phosphate in the blood is a stimulus to increased secretion of solution of parathyroid, (4) that solution of parathyroid effects phosphate control by stimulating excretion of phosphate by the kidney and by mobilizing calcium ions from the storehouse in the bones and (5) that, vice versa, if the parathyroids are removed the body will be unable to deal adequately with the blood phosphate. It seems reasonable that in the treatment of generalized fibrocystic diseases and rheumatoid arthritis an attempt should be made to reduce the absorption of phosphorus and thus remove the stimulus to the overproduction of solution of parathyroid. A method for reducing phosphorus absorption consisted in giving daily an amount of aluminum acetate with a phosphate-combining power equivalent to from 150 to 220 mg. of calcium. Children were given a correspondingly smaller dose. A fourth of this daily dose was taken after each meal, so that the aluminum could combine with the phosphate of all food eaten during the day. Too large a dose of aluminum acetate can produce rickets. No additional form of therapy was used. The patients were on their normal diets. In order to give them some source of calcium and vitamin D they took not less than 1 pint (0.5 liter) of milk a day. Undoubted improvement was produced in three of four cases of generalized fibrocystic osteitis, indicating that the phosphorus radical is responsible for the excessive stimulation of the parathyroids. The results of aluminum acetate therapy have been most encouraging in twelve cases of rheumatoid arthritis and three of spondylitis ankylopoietica. Some of these patients had previously received gold therapy or had a focus of sepsis removed, all without effect. Of these fifteen patients twelve improved in color, ten gained weight, nine were markedly relieved of joint pains and in two there was no improvement. The subsidence of symptoms in some joints was almost dramatic and, except for joints which were ankylosed when treatment commenced, motion improved. Two patients who had typical deformities of the fingers could, after four months of treatment, actively correct this. In some the spindle-shaped swellings of the finger joints disappeared, although no physical therapy was given. However such therapy, carefully supervised, should enhance the value of treatment with aluminum acetate. Eight patients suffering from Paget's disease improved in color and in weight on this therapy. They could walk farther and do more before fatigue set in. Bone pain became less frequent and less intense and in some cases disappeared. In two cases controlled roentgenograms suggested a slow change toward normality. There was less expansion, the outline of the cortex seemed more definite and the density of the bone was reduced. In spite of clinical improvement, there was no appreciable change in the roentgenograms of any other patient. The author hopes that the results are promising enough to open up a new field of investigation and a new line of treatment for these distressing diseases.

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Antibodies to Brain and Their Relation to Demyelinization. L. C. Kolb and B. Bolton.—p. 111.
Role of Potassium in Myasthenia Gravis. J. N. Cumings.—p. 115.
Atrophy of Thalamus in Case of Acquired Hemiplegia Associated with Diffuse Porencephaly and Sclerosis of Left Cerebral Hemisphere. W. E. le Gros Clark and D. S. Russell.—p. 123.
Acoustic Tumors. H. Olivecrona.—p. 141.

Lancet, London

1:771-818 (April 27) 1940

*Sciatica and Intervertebral Disk. J. Pennybacker.—p. 771.
Carcinomatosis of Bone Difficulties in Diagnosis. A. M. G. Campbell.—p. 777.
Blood Viscosity in Cardiac Failure: Its Modification by Administration of Calcium Gluconate. A. S. Rogen.—p. 780.
Lumbar Curve in Women: Changes Produced by Displacement of Center of Gravity. L. K. Klinderová.—p. 782.
Pfeiffer Bacillus Meningitis: Unsuccessfully Treated by Chemotherapy. J. C. H. Mackenzie, A. P. M. Page and E. M. Ward.—p. 785.

Sciatica and the Intervertebral Disk.—Pennybacker's report is concerned with thirty consecutive cases of sciatica treated in the Nuffield Department of Surgery, Oxford, since May 1939. Since all the patients were operated on within the past nine months, it is too early to speak of ultimate results. The most dramatic relief was obtained in twenty-one cases of severe sciatica in which a loose fragment of prolapsed nucleus pulposus was removed. Most of the patients began to walk seventeen or eighteen days after operation, and although there was some soreness and stiffness of the back at first this improved rapidly with graduated exercise, and by the end of a month the patients were free from symptoms. Of the five patients who had herniation of the annulus fibrosus, two experienced immediate relief and had a painless convalescence. In three others, the results of operation were not satisfactory. The two patients with the cauda equina syndrome were completely free from pain after operation, but recovery of sphincter control and of the sensory and motor functions has been slow. Of the remaining cases, one was a negative exploration, but the patient has benefited considerably from the laminectomy; in the other, a fibroangioma was removed from the intervertebral canal, but this has not completely relieved the pain. In no case has there been any aggravation of the symptoms or neurologic signs after operation. It appears that operation is advisable in three groups of patients: (1) in cases of acute sciatica which send the patient to bed and in which, despite adequate rest for from five to six weeks, the severe pain persists; (2) in frequently recurring attacks, which may be severe enough to send the patient to bed or to make his life a misery for three or four weeks every year; (3) in some cases of chronic continuous sciatica due to a prolapsed nucleus pulposus, in which the results of operation are no less satisfactory than in the acute and severe cases. But others in this group will be due to a herniated annulus fibrosus, and the results in these have not been as uniformly satisfactory as in those due to prolapse of the nucleus pulposus. Until it is possible to differentiate these varieties by the history and examination, or by myelography, some doubt must remain about the value of operation.

Medical Journal of Australia, Sydney

1:535-572 (April 20) 1940

Study of Juvenile Gout in Patient Suffering from Chronic Erythronoclastic Anemia of Obscure Origin, Together with Observations on Physical State of Uric Acid in Blood and Effects of Splenectomy. C. G. Lambie.—p. 535.

Tubercle, London

21:153-184 (Feb.) 1940

Effect of Sulfanilamide on Growth of Acid-Fast Bacilli in Vitro. H. C. Ballon and A. Guernon.—p. 153.
Port of Entry, Primary Focus and Contact Infection. S. R. Gloyne.—p. 161.

Revue Française de Pédiatrie, Paris

15:313-392 (No. 4) 1939

*Pathology of Liver in Children. P. Woringer.—p. 313.
Kernicterus of the Newborn. M. Péhu and M. Dollet.—p. 349.

"Lipogenic Dyshepatia" in Children.—Under this name Woringer discusses a minor liver disorder of children that receives scant attention in the textbooks. Frequently, though not exclusively, found in pampered children of preschool and school age, it involves the enlargement of the liver and is characterized by abdominal pain, nausea, vomiting, anorexia, pallor, headache, dipsosis and the absence of fever. It is primarily due to a metabolic dysfunction and yields to a rational fat excluding regimen. However, other therapeutic aids may be employed adjuvantly. The sudden onset of the symptoms may confuse diagnosis. The significant factor is the size of the liver. Examined with the patient lying on his back, the head slightly raised and the knees flexed, the liver presents itself to the experienced touch as uniformly smooth and plastic, with a well defined edge but exceeding the dimensions of 2 cc. below the costal margin, accepted by the author as the norm for normal livers in children of that age. Pathologic enlargements of the liver may be found to attain to 9 cc. below the costal arch. Tests for bilirubin, albumin, sugar and acetone bodies are negative. Fats chiefly productive of hepatic dysfunction are egg yolk, cocoa butter in chocolate, animal fats and milk fats in the various forms. Different persons are affected differently by different fats. Vegetable oils were found to be less harmful; olive oil was proved to be useful in maintaining necessary fat metabolism. Hereditary diathesis, previous infectious diseases and sedentary habits may enter into the pathologic picture. Whereas symptoms may be promptly checked by correct diet, it may take several weeks and months before the liver returns to normal size. It may long require dietary supervision in order to protect it against recurrence. The author stresses the diagnostic value of correct liver palpation, offers a detailed dietary program and believes, on the basis of familial and other investigations, that a connection exists between unrecognized and neglected "lipogenic dyshepatia" and the evolution of biliary calculi in later life.

Schweizerische medizinische Wochenschrift, Basel

70:317-336 (April 13) 1940

Disturbances of Water Exchange in Nontropical Sprue. H. W. Hotz.—p. 317.
*Early Colposcopic Diagnosis and Prevention of Carcinoma of Os Uteri. H. Hinselmann.—p. 320.
*Electric Shock Therapy in Psychiatry. M. Müller.—p. 323.
Comparative Study of Brachial Arterial Tension, Retinal Arterial Tension and Ocular Tension During Insulin Shock. R. de Montmollin and E. B. Streiff.—p. 326.
Determination of Reduction of Oxyhemoglobin in Blood of Living Human Subjects: New Method and Possibility of Its Use for Clinical Diagnosis. L. Rósa.—p. 328.
Treatment of Cervical Catarrh. W. Schellenberg.—p. 329.

Colposcopy and Prevention of Carcinoma of Os Uteri.—Hinselmann, whose experience with colposcopy covers a period of fifteen years, maintains that it is superior to ordinary speculum examination. The degree of superiority is dependent on the apparatus and the experience of the examiner. For routine use in every gynecologic examination he recommends a colposcope giving a 10.5 fold magnification. The inspection should be binocular and the distance from 14 to 19 cm. He distinguishes between simple and extended colposcopy. Extension of colposcopy involves (1) histochemical aids and (2) optical aids. In performing a colposcopy, the author uses the simple method with ordinary mixed light followed by monochromatic illumination. The acetic acid test is applied and the cervix again examined with the aid of the monochromatic illumination and once more with the ordinary light. Schiller's iodine test is followed by examination with monochromatic lights. In this extended form colposcopy requires more time than the speculum examination. Cornified atypical epithelium can be detected with a less than tenfold magnification; the diagnosis, however, of atypical epithelium without cornification or of cone formation is not possible with a fivefold magnification. Thus it is apparent that cases cannot be sorted out with low magnifications. Colposcopy complemented by the use of chemical reagents provides such conclusive evidence as to make numerous biopsies unneces-

sary. The detection of the early changes makes possible early treatment, thereby avoiding not only extensive operations but also the development of the advanced forms of carcinoma.

Electric Shock Therapy in Psychiatry.—Disadvantages of metrazol shock therapy induced Müller to try the electric shock therapy introduced by Cerletti and Bini. The convulsions are produced by means of an alternating current of from 400 to 800 milliamperes, a tension of from 60 to 130 volts and a passage time of from 0.1 to 0.5 second. A preliminary test determines the conduction resistance on the head of the patient. The level of the resistance serves as the basis for the computation of the shock dose, although there was no close relationship between the conduction resistance and the current strength necessary for the elicitation of a shock. Not only does the resistance differ individually but it changes in the same patient. The "shock dose" has a tendency to be constant or to increase slightly. It was usually between 80 and 110 volts. Increase in tolerance in the course of treatment rarely exceeded 10 to 16 volts. The tension should not be over 130 volts and the passage time of the current should ordinarily not exceed 0.1 second. If the voltage is inadequate for the production of a complete attack, the time may be increased to 0.2 second. The author employed electric shock therapy in thirty-two cases, the total number of shocks being 413. The author gained the impression that the method was not inferior to other methods of shock therapy. The electric shock therapy may be combined with insulin therapy for schizophrenic patients. The chief advantage of the electric shock is that it is free from the fright and anxiety associated with other forms of shock therapy. Patients who previously had received metrazol shock corroborated this. The author is of the opinion that the electric shock therapy may become preferable to other forms of shock therapy.

Archivio di Ortopedia, Milan

55:433-551 (Dec. 31) 1939. **Partial Index**

*Joint Analgesia in Orthopedics. L. Bitossi Coronedi.—p. 473.

Joint Analgesia in Orthopedics.—Bitossi Coronedi established in experiment that joint pain originates in the periarticular tissues and that it can be controlled by local infiltrations of a solution of procaine hydrochloride. He treated twenty-nine cases of joint stiffness due to such causes as prolonged immobilization in fractures, trauma, disease of the joint and especially gonorrheal arthritis by articular anesthesia combined with physical therapy. Physical therapy alone had previously failed. The treatment consisted of local infiltration with an 8 per cent solution of procaine hydrochloride in amounts of from 6 to 7 cc. The analgesic effect appeared within half an hour and lasted for several days. Analgesia of the joint was as effective and lasting when the infiltration was made of the periarticular tissues alone as when made into the periarticular tissues and into the joint cavity. The effects were diminished if the infiltration was made into the articular cavity only. Joint function, where stiffness was caused by painful contracture, was reestablished after one infiltration followed by mobilization. In grave cases of joint stiffness from immobilization, trauma or arthritis the combined treatment of repeated injections administered at long intervals up to a total of from two to four, and physical therapy gave satisfactory functional results in the majority of cases. The treatment failed in the presence of established anatomic alterations of the joint such as destruction of the cartilages or bony ankylosis.

Bol. de la Soc. Cubana de Pediatría, Havana

12:77-136 (March) 1940. **Partial Index**

*Nutritional Disturbances from Avitaminosis B. A. J. Aballí and A. Escobar Aces.—p. 91.

Nutritional Disturbances from Avitaminosis B.—Aballí and Escobar Aces studied avitaminosis B in sixty-three infants. There were typical or atypical symptoms of pellagra and beriberi with or without cutaneous lesions in forty-three and nutritional and gastrointestinal disturbances in twenty. The majority of the patients had moderate or acute gastrointestinal and nutritional disturbances which were controlled by proper diet combined with vitamin B therapy (vitamin B, nicotinic acid and vitamin B_1, either alone or combined). Enteric infections assume a severe character in the presence of avitaminosis and frequently lead to grave and even fatal toxicosis. In the group of patients with acute or subacute avitaminosis B, thirteen died, four showed no change and twenty-five improved rapidly. The twenty-four patients who received early treatment made a quick recovery. The symptoms were readily controlled and the weight of the infants increased, on an average, 1 pound a week. Necropsy in ten cases revealed extensive microcystic colitis, fatty degeneration of the liver and serous hepatitis. Cases in which the mucosa of the small intestine was slightly edematous and the seat of small ulcerations were rare.

Revista Médica Latino-Americana, Buenos Aires

25:621-732 (March) 1940. **Partial Index**

*Vitamin C in Liver Diseases. J. M. González Galván.—p. 644.
Malignant Endocarditis Lenta of Early Meningeal Form. L. Clatro Sagastume and N. J. Zurutuza.—p. 651.

Vitamin C in Liver Diseases.—González Galván observed that certain complications of liver disease are caused by avitaminosis C and can be improved or controlled by intravenous injections of vitamin C in doses of from 0.05 to 0.1 Gm. The results are satisfactory when the vitamin is administered along with the correct treatment of the disease. In the group of patients observed by him the vitamin C therapy controlled gastric hemorrhages due to liver insufficiency, increased the diuresis in ascitic cirrhosis, improved the general condition of patients in cases of hepatitis associated with avitaminosis and favorably modified the course of toxic hepatitis. To obtain satisfactory results the treatment should be given over an extended period. The treatment does not influence the course of ascitic cirrhosis of the liver. The diuretic effects on the edema and the general condition of patients with ascitic cirrhosis are transient.

Archiv für klinische Chirurgie, Berlin

198:361-480 (March 2) 1940. **Partial Index**

*Recent Contributions to Surgical Treatment of Pancreatic Cysts. V. Kafka.—p. 361.
*Renal Hemangiomas. B. Pitrolffy-Szabó.—p. 371.
*Report on Cases of Mammary Carcinoma Observed at Two Clinics in Bonn Between 1928 and 1935. E. Derra and F. Blittersdorf.—p. 377.
Significance of Fibrin in Bacterial Infections. A. Plenk.—p. 402.
Pathogenesis and Pathologic Anatomy of Perthes' Disease. T. von Tapavicza.—p. 410.
Gastritis Phlegmonosa. G. Beyer.—p. 463.
Repeated Development and Perforation of Peptic Ulcer of Jejunum After Anterior Antecolic Gastro-Enterostomy with Braun's Anastomosis. M. Matyas.—p. 474.

Surgical Treatment of Pancreatic Cysts.—Kafka describes two cases of pancreatic cyst. A woman aged 58 with a pseudocyst was treated by means of a primary pancreatocystogastrostomy. The healing tendency seemed favorable, but the patient succumbed to a sudden hemorrhage into the intestinal tract on the ninth day after the operation. The second patient was a woman aged 56 with a pseudocyst. The first intervention resulted in a fistula and a cavity in the pancreas. A subsequent pancreatocystojejunostomy resulted in a complete cure. The author reviews the various surgical methods and evaluates the various types of anastomosis. These operations were palliative and were regarded free from danger. The fatal outcome in one of the author's cases demonstrated the possibility of complications which may arise from the anastomosis of a pancreatic cyst with the intestinal tract. The author advises against a primary anastomosis of the cyst, particularly with the stomach. Such an intervention would be permissible only in the form of Jedlička's operation; that is, a lateral pancreatogastrostomy with external drainage of the residual cavity. Otherwise, marsupialization is to be preferred. A persistent fistula may be anastomosed with the gastrointestinal tract. If x-ray examination or laparotomy reveals, in addition, a residual cavity, it may be treated by a wide cystenterostomy, in which the danger of obliteration of the stoma does not exist to the same extent as in the presence of a simple anastomosis of the fistula with the digestive tract.

Renal Hemangiomas.—According to Pitrolffy-Sabó, hemangiomas of the kidneys are rare, only three cases having been detected among 251 renal tumors at the urologic clinic of the University of Budapest. One of these tumors was very small and had unusual localization. A decapsulation for a

localized nephritis, suspected because of a persistent hematuria, failed to disclose the cause of the bleeding. Continued hematuria and increasing anemia necessitated a nephrectomy. Inspection of the pelvis of the kidney after formaldehyde fixation disclosed a protrusion of the mucosa twice the size of a pinhead. Sectioning revealed in the wall of the renal pelvis a structure dissecting the muscular layer, which consisted of blood-filled cavities separated by septums of connective tissue. The lumens were filled with erythrocytes. Since the substance of the kidney showed no change that could have been responsible for the hematuria, this extremely small cavernous hemangioma must have been the source. In the second case a cavernous hemangioma the size of a hazel nut was discovered in the region of a papilla near the upper pole. The third patient had a cavernous angioma on the posterior surface of the left kidney, which penetrated into the renal tissue to a depth of 1 cm. Renal hemangiomas always require surgical intervention. Decapsulation is unsatisfactory because it often has to be followed by nephrectomy. Nephrotomy is valuable chiefly for the diagnosis, although it may also permit the removal of a hemangioma in a renal papilla. It may, however, be followed by postoperative hemorrhage. The author therefore considers nephrectomy preferable for renal hemangioma. Diagnosis is possible only after exposure of the kidney because hematuria is frequently the only symptom and pyelography fails to disclose the source.

Breast Carcinoma.—Derra and Blittersdorf analyzed the results in 313 cases of malignant mammary tumors (308 carcinomas and five sarcomas) treated at two hospitals in Bonn from 1928 to 1935. The 308 cases of carcinoma comprise 180 treated for the first time, seventy-nine treated for recurrence and metastases and forty-nine hospitalized for prophylactic postoperative irradiation after surgical treatment elsewhere. Investigations on the etiologic significance of hereditary predisposition, trauma, mastitis, generative capacity and goiter were negative. There was a noticeable increase in the number of patients who asked medical advice during the first three months and a decrease in those who had waited longer. The treatment of choice was the radical operation. Palliative operations were not always avoidable. The total surgical mortality was 5 per cent, that of the radical operation 4.4 per cent. The length of survival was good. Results were poor in the seventy-nine cases of recurrence and metastases. Recurrence took place in approximately 80 per cent of the cases during the first three years, but a definite estimate regarding recurrence is possible at the earliest after five years. Recurrence took place as late as eleven and fourteen years after the primary operation. Postoperative irradiation did not improve the therapeutic results. The suggestion has been made that the tumor be extirpated and the regional mestastases combated by roentgen irradiation. This point of view is to be deplored. The present survey gives support to the rationale of the radical operation. The earlier it is performed, the better are the results.

Klinische Wochenschrift, Berlin

19:193-216 (March 2) 1940

Summer and Winter Rhythm in Carbohydrate Metabolism of Warm Blooded Animals as Cause of Divergences in Surgically Induced Hyperglycemias. F. Chrometzka and G. Beutmann.—p. 196.
Nitrite Content of Sputum, Gastric Juice and Urine. J. Várady and G. Szántó.—p. 200.
Vitamin C and Carotene Content in Serum of Slaughterhouse Animals and Fowls. Marie Maxim.—p. 203.
*Vitamin B_1 Tolerance Tests. S. Molnár and M. Horányi.—p. 204.
A Plea for More Rapid Centrifuges. W. Schmidt-Lange.—p. 206.

Vitamin B_1 Tolerance Tests.—Molnár and Horányi tested the vitamin B_1 metabolism of thirty-two patients and nine controls by observing the increase of this vitamin in the blood after injection. The clinical pictures of twenty-four of these were those of ulcer, malignant tumor, cachexia associated with a continuous high pyrexia, and exophthalmic goiter. The procedure employed was a preliminary test of the vitamin B_1 content of the blood, followed by an intravenous injection of 1,000 micrograms of vitamin B_1, an amount equivalent to the normal daily need of a healthy person. The vitamin B_1 blood level was then measured successively after five, ten, fifteen, thirty and sixty minutes. Concurrently, the vitamin B_1 level in the urine was examined for three hours after the injection. Comparison of the vitamin B_1 level in the blood of the two groups disclosed a scarcely appreciable increase in the clinical cases, the average amounting to 28 micrograms per hundred cubic centimeters as compared with a 10 microgram average in the control group. The presence of vitamin B_1 in the urine was likewise lower than in the control group, but no conclusions could be based on the percental differences. Special tests were made on six patients: three with ulcers but without B_1 deficiency, two with pernicious anemia and one with afebrile panmyelophthisis. Vitamin B_1 deficiency in ulcer cases was found to be due not to a specific cause but to vitamin B_1 impoverishment inherent in the special diet. No vitamin B_1 deficiency was observed in the three other cases. Additional tests made in two cases of Addison's disease produced contradictory results. The author believes that most of the injected vitamin B_1 which is not accounted for in the blood or urine is converted into cocarboxylase and either passes into the blood stream or is deposited in the tissues.

Zentralblatt für Gynäkologie, Leipzig

64:433-464 (March 16) 1940

Present Status of Therapy of Genital Carcinoma. O. Bokelmann.—p. 434.
*Casuistic Contribution to Clinical Aspects of Dysgerminoma Ovarii. R. Kramberg.—p. 439.
Intra-Abdominal Hemorrhage in Myomatous Uterus During Delivery. K. Jäger.—p. 443.
Successful Operations for Thrombi: Two Cases. W. Schmidt.—p. 446.

Ovarian Dysgerminoma.—Dysgerminoma ovarii occupies a unique place among ovarian cancers because, unlike granulosa cell tumor or arrhenoblastoma, it does not possess a hormonal function. Eighty-five cases have thus far been observed. Dysgerminoma originates in the not yet differentiated germinal epithelium and, like the original tissue, does not exert a hormonal effect. The germinal epithelium loses the capacity to become differentiated and does not tend in the female, male or hermaphroditic direction but in an asexual one. The tumors vary in size between hardly visible ovarian infiltrations and giant tumors. The cells are fragile and exhibit extremely active karyokinesis. Metastases take place into the pleura, the omentum, the peritoneum and the other ovary. The rapid growth, the metastases and the relapses indicate an unfavorable prognosis. Kramberg reports that a woman aged 24 presented a history of amenorrhea followed eighteen months later by visible abdominal enlargement. A hemorrhage of four weeks' duration called for operative intervention and removal of a dysgerminoma of the right ovary weighing 2,300 Gm. There were no metastases or enlarged lymph nodes. She was given roentgen and radium radiation. At a follow-up examination a year after she was well.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

84:1197-1284 (March 30) 1940

Sympathetic Neuroses. L. van der Horst.—p. 1199.
*Exanthematous Typhus. P. H. Kramer.—p. 1206.
Critical Evaluation of Partial Thoracoplasty in Combination with Paralysis of Diaphragm on One Side. R. Finaly.—p. 1215.
Case of Anthrax with Lesions in Pharynx and Larynx. P. Belgraver and J. van Woerden.—p. 1221.
Preparation and Shipment of Blood Group Serums. A. Pondman.—p. 1225.
Treatment of Pneumococcic Disorders with Sulfapyridine and Serum. J. Mulder.—p. 1232.

Exanthematous Typhus.—Kramer directs attention to the increased danger of outbreaks of exanthematous typhus under the present war conditions in Europe. He reproduces a map showing its incidence during 1939 in the countries of eastern Europe, particularly Poland. This eastern European exanthematous typhus is the true louse typhus; that is, it is transmitted by body lice, the digestive tract of which harbors Rickettsia prowazeki. The author reviews the clinical aspects, citing his own observations in the course of the epidemic of 1919 in Rotterdam. He stresses the difficulties encountered in the differentiation of exanthematous typhus from typhoid and from meningococcic septicemia. Delousing and active immunization are the most powerful weapons against exanthematous typhus. Its treatment is symptomatic, neither chemotherapy nor convalescent serum having produced therapeutic results.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE 1940

Titles have been listed or Abstracts made of important articles in the following journals in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Three journals may be borrowed at a time. No journals are available prior to 1930. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Accademia medica. Genoa.
Acta chirurgica Scandinavica. Stockholm.
Acta medica Scandinavica. Stockholm.
Acta ophthalmologica. Copenhagen.
Acta orthopaedica Scandinavica. Copenhagen.
Acta pædiatrica. Stockholm.
Acta radiologica. Stockholm.
Acta tuberculosea Scandinavica. Copenhagen.
American Heart Journal. St. Louis.
American Journal of Cancer. New York.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Huntington, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. St. Louis.
American Journal of Orthopsychiatry. Menasha, Wis.
American Journal of Pathology. Boston.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anales de la clinica Quirurgica. Lima.
Annales de dermatologie et de syphiligraphie. Paris.
Annales paediatrici. Basel.
Annali di radiologia diagnostica. Bologna.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Archiv für Dermatologie und Syphilis. Berlin.
Archiv für experimentelle Pathologie und Pharmakologie. Berlin.
Archiv für Gewerbepathologie und Gewerbehygiene. Berlin.
Archiv für Kinderheilkunde. Stuttgart.
Archiv für klinische Chirurgie. Berlin.
Archiv für Ohren-, Nasen- und Kehlkopfheilkunde. Berlin.
Archiv für Ophthalmologie. Berlin.
Archiv für orthopädische und Unfall-Chirurgie. Berlin.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des maladies de l'appareil digestif. Paris.
Archives des maladies du cœur. Paris.
Archives médico-chirurgicales de l'appareil respiratoire. Paris.
Archives de médecine des enfants. Paris.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Therapy. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivio italiano di chirurgia. Bologna.
Archivio de ortopedia. Milan.
Archivos argentinos de pediatría. Buenos Aires.
Ateneo parmense. Parma.
Athena. Rome.
Australian Journal of Experimental Biology and Medical Science. Adelaide.
Beiträge zur klinischen Chirurgie. Berlin.
Beiträge zur Klinik der Tuberkulose. Berlin.
Bibliotek for læger. Copenhagen.
Boletín de la Asociación médica de Puerto Rico. Puerto Rico.
Boletín de la Sociedad cubana de pediatría. Havana.
Bollettino d'oculistica. Florence.
Brain. London.
Brasil-medico. Rio de Janeiro.
British Heart Journal. London.
British Journal of Children's Diseases. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bruxelles-médical. Brussels.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the New York Academy of Medicine. New York.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Canadian Public Health Journal. Toronto.
Cardiologia. Basel.
Chinese Medical Journal. Peiping.
Chirurg. Berlin.
Chirurgia degli organi di movimento. Bologna.
Clinica medica italiana. Milan.
Confinia neurologica. Basel.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Dermatologica. Basel.
Deutsches Archiv für klinische Medizin. Berlin.
Deutsche medizinische Wochenschrift. Leipzig.
Deutsche Zeitschrift für Chirurgie. Berlin.
Edinburgh Medical Journal.
Encéphale. Paris.
Endocrinology. Los Angeles.
Endokrinologie. Leipzig.
Fortschritte auf dem Gebiete der Röntgenstrahlen. Leipzig.
Gastroenterologia. Basel.
Gazette des hôpitaux. Paris.
Gazzetta degli ospedali e delle cliniche. Milan.
Geburtshilfe und Frauenheilkunde. Leipzig.
Geneeskundig tijdschrift voor Nederlandsch-Indië. Batavia.
Giornale di clinica medica. Parma.
Giornale veneto de scienze mediche. Venice.
Glasgow Medical Journal.
Gynécologie. Paris.
Gynécologie et obstétrique. Paris.
Illinois Medical Journal. Chicago.
Indian Medical Gazette. Calcutta.
Journal of Allergy. St. Louis.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Aviation Medicine. St. Paul.
Journal of Bacteriology. Baltimore.
Journal belge de neurologie et de psychiatrie. Brussels.
Journal belge d'urologie. Brussels.
Journal of Bone and Joint Surgery. Boston.
Journal de chirurgie. Paris.
Journal of Clinical Investigation. New York.
Journal of the Connecticut State Medical Society (continued as Connecticut State Medical Journal).
Journal of Endocrinology. London.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of Industrial Hygiene and Toxicology. Baltimore.
Journal of Infectious Diseases. Chicago.
Journal of Investigative Dermatology. Baltimore.
Journal of the Iowa State Medical Society. Des Moines.
Journal of the Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal-Lancet. Minneapolis.
Journal of Laryngology and Otology. London.
Journal of the Maine Medical Association. Portland.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. Lansing.
Journal of the Missouri State Medical Association. St. Louis.
Journal of the Mount Sinai Hospital. New York.
Journal of Nervous and Mental Disease. New York.
Journal of Neurology and Psychiatry. London.
Journal of Neurophysiology. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.

*Cannot be lent.

Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
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SUBJECT INDEX

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The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "SS," Student Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Am.—America
A.—Association
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical
Med.—Medical
Nat.—National
Phar.—Pharmaceutical
Phys.—Physicians
Rev.—Revision
Ry.—Railway
Soc.—Society
Surg.—Surgery
Surgs.—Surgeons
S.—Surgical

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